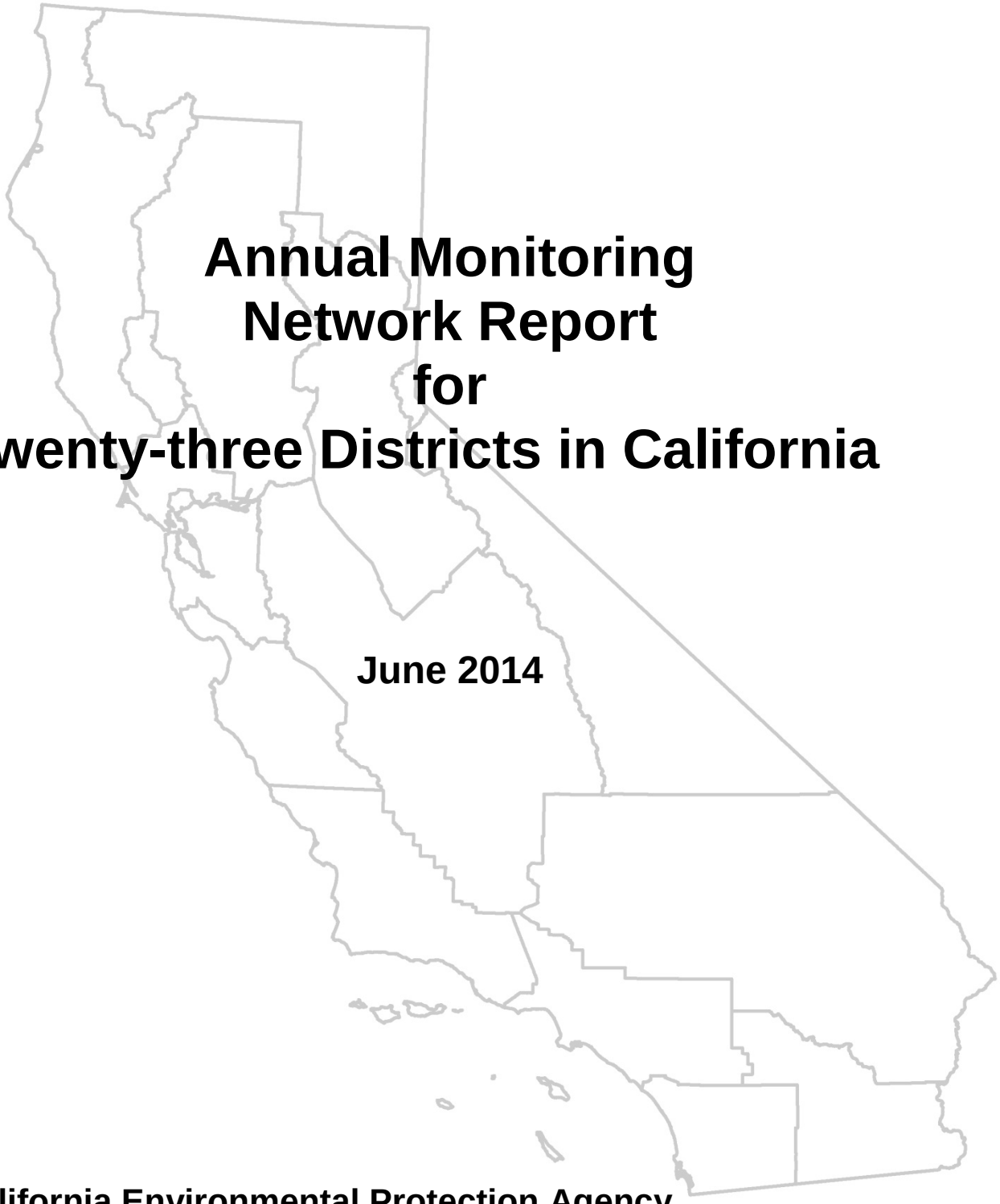
Annual Monitoring Network Report for Twenty-three Districts in California



June 2014

California Environmental Protection Agency

Air Resources Board

ANNUAL MONITORING NETWORK REPORT
FOR
TWENTY-THREE DISTRICTS IN CALIFORNIA

California Air Resources Board

June 2014

Table of Contents

List of Tables

List of Figures

Section 1. Introduction

Federal regulations require State and local agencies that conduct ambient air monitoring for regulatory purposes to submit an Annual Monitoring Network Report, beginning in 2007. The report must contain specific monitoring network information and be available for a 30-day public inspection period prior to submittal to the U.S. Environmental Protection Agency (U.S. EPA). This report meets the requirements specified in Title 40, Code of Federal Regulations, Part 58.10 (40 CFR 58.10) for a subset of the California monitoring network.

This report covers the monitoring network for 23 of the 32 air districts within the Air Resources Board (ARB) Primary Quality Assurance Organization (PQAO). A PQAO is the umbrella under which monitoring agencies are organized to ensure that monitoring is conducted according to a common set of procedures, using common calibration facilities and standards, and that oversight is conducted by one air quality organization. Most of the districts in California are included in the ARB PQAO. The exceptions are the South Coast, San Diego, and Bay Area districts, which each comprise their own PQAO. Each PQAO is responsible for their monitoring network and reports directly to U.S. EPA on monitoring network requirements.

Table 1 lists the districts in the ARB PQAO that are included within the scope of this report, as well as those districts that are preparing their own report. This report covers documentation of the monitoring network for the period of January 1 through December 31, 2013, along with a discussion of proposed changes to the network. Consistent with directions from the U.S. EPA, this report includes monitors operated by the local districts, ARB, and other agencies within the jurisdiction of the region included in this report. This includes monitors designated as State and Local Air Monitoring Sites (SLAMS), National Core (NCore) multi-pollutant monitoring stations, Special Purpose Monitoring (SPM), and other types of monitors operated by ARB, air districts, and National Park Service (NPS). This report also includes the Federal Reference Method (FRM) and Federal Equivalent Method (FEM) monitors.

This report documents that the area covered by this report complies with federal monitoring requirements, which are specified in 40 CFR 58, Appendices A through E. Table 2 identifies the elements from 40 CFR 58.10 that are required to be included in the annual report. The requirements are comprehensive and include information on items such as minimum monitoring requirements, monitor operation, monitor siting, sampling schedule, and quality assurance activities.

Overview of Report

Table 1 and Figure 1 identify the 23 air districts within the ARB PQAO covered in this report as well as the 9 districts in the ARB PQAO that are preparing their own report. A brief summary of elements included in this report is listed below.

- Summary of CFR elements required for inclusion in the report;
- Detailed information on each monitor;
- Minimum monitoring requirements and compliance with these requirements;
- PM collocation requirements;
- PM design values;
- $PM_{2.5}$ FRM operating schedules;
- Proposed and implemented network changes.

In compiling this report, ARB solicited input from and review by the local air districts whose jurisdictions are included. Also, the report was available for a 30 day public inspection period prior to its submittal to the U.S. EPA. This report can be downloaded from the internet at www.arb.ca.gov/aqd/amnr/amnr.htm.

Table 1
Districts Included in the ARB Primary Quality Assurance Organization (PQAO)

Air districts that are included in this ARB report	Air districts drafting their own Annual Network Plans
Amador County APCD	Great Basin Unified APCD
Antelope Valley APCD	Imperial County APCD
Butte County AQMD	Monterey Bay Unified APCD
Calaveras County APCD	North Coast Unified AQMD
Colusa County APCD	Sacramento Metropolitan AQMD
Eastern Kern APCD	San Joaquin Valley APCD
El Dorado County AQMD	San Luis Obispo County APCD
Feather River AQMD	Santa Barbara County APCD
Glenn County APCD	Ventura County APCD
Lake County AQMD	
Lassen County APCD	
Mariposa County APCD	
Mendocino County AQMD	
Modoc County APCD	
Mojave Desert AQMD	
Northern Sierra AQMD	
Northern Sonoma County APCD	
Placer County APCD	
Shasta County AQMD	
Siskiyou County APCD	
Tehama County APCD	
Tuolumne County APCD	
Yolo-Solano AQMD	

Notes:
APCD stands for Air Pollution Control District.
AQMD stands for Air Quality Management District.

The South Coast, San Diego and Bay Area districts are not included in this table. These three districts are drafting their own network plan because they are designated PQAOs.

Figure 1
California PQAOs

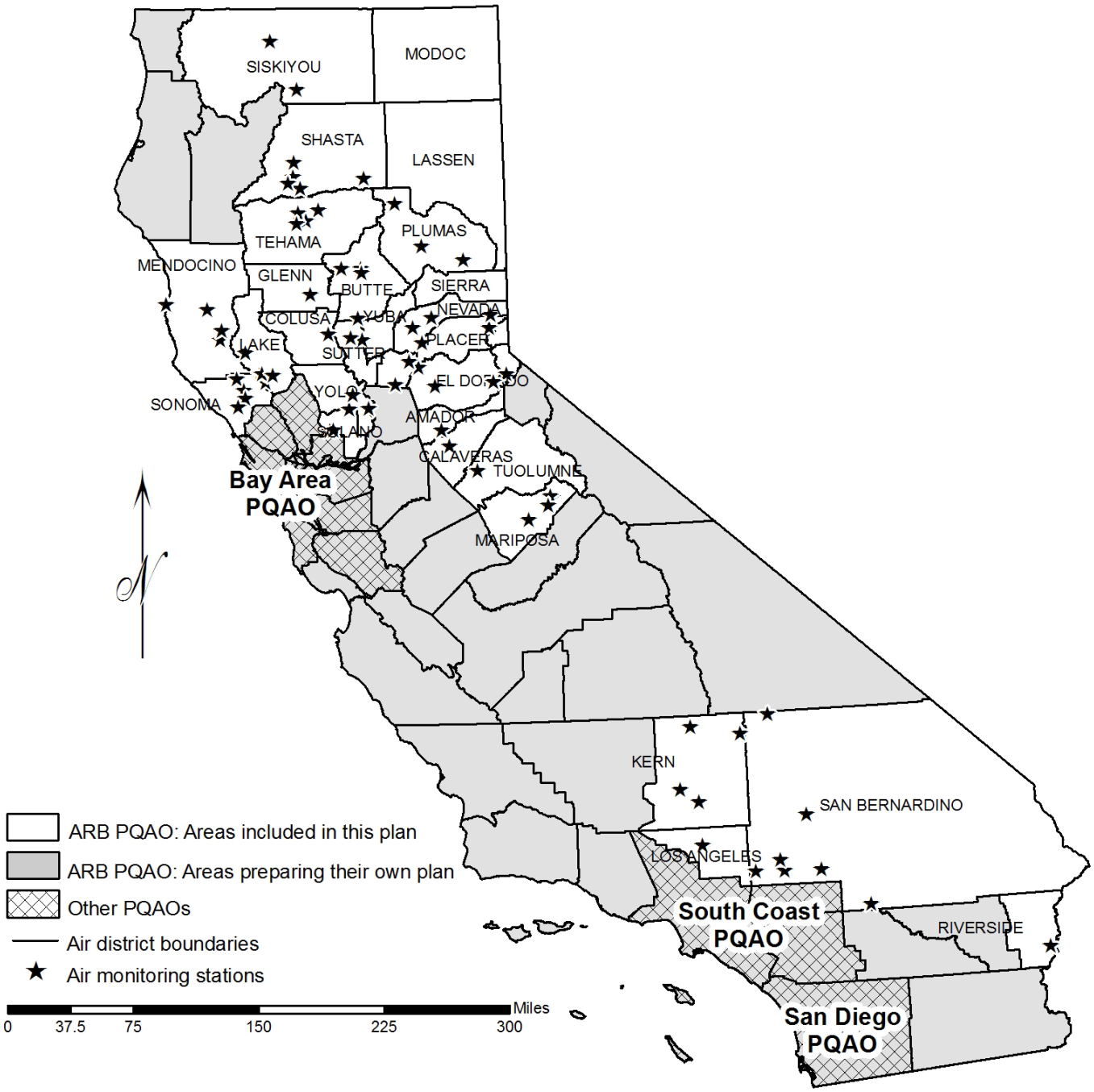


Table 2
Location of Information Required for Annual Network Plan

Elements required by 40 CFR 58.10	Location in Annual Network Plan
Monitoring purpose information	Section 3
Evidence that siting and operation criteria are met:	
40 CFR 58, Appendix A	Section 6 & 7
40 CFR 58, Appendix B	Section 7
40 CFR 58, Appendix D	Section 5 & 6
40 CFR 58, Appendix E	Section 7
Air Quality System Site Identification Number (AQS Site ID)	Section 3, Table 3 Section 4, Table 4
Location of sites	
Street address	Section 3, Table 3
Geographic coordinates	Section 4, Table 4
Sampling and analysis methods of monitors	Section 4, Table 4
Operating schedules for monitors	Section 8
Proposals to move/remove stations	Section 10
Monitoring objectives and spatial scale	Sections 3 & 4, Tables 3 & 4
Sites suitable or not for comparison to the annual $PM_{2.5}$ National Ambient Air Quality Standard	Section 9.1
Core-Based statistical area information (Metropolitan and Micropolitan)	Section 3, Tables 3 Section 4, Table 4 Section 5, Tables 6, 6a, 7 & 8 Appendix B
Review of changes to $PM_{2.5}$ Network	Section 9.2

Section 2. Monitoring Network Overview

California's ambient air monitoring network is one of the most extensive in the world, consisting of over 250 sites where air pollution levels are monitored and more than 700 monitors used to measure the pollutant levels. A monitoring network this large is needed to cover the diverse range of topography, meteorology, emissions, and air quality in California, while adequately representing a large population. The monitoring network is critical in assessing the State's clean air progress and in determining pollutant exposures in California.

The network of monitoring sites for a pollutant tends to be denser where the air quality problem is worse and where the population is greater. The monitoring network also strives to provide representative data to all the broad geographical areas in California, including coastal, interior valleys, desert, and mountainous regions. Monitoring is also conducted in Mexico, across the border from San Diego and Imperial counties. Monitors are operated by ARB, some by local air districts, and a few by other entities including the National Park Service, private contractors, and tribal authorities. Note that tribal monitors are not included in this report.

Ambient concentration data are collected for a wide variety of pollutants. These include ozone (O_3), particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$), particulate matter with a diameter of 10 microns or less (PM_{10}), and a number of toxic compounds. While toxics monitoring plays an integral part in air monitoring programs, this report only covers those pollutants specified by federal requirements to be included in the annual monitoring network plans. Monitoring for meteorological parameters is also conducted at a number of sites. The data is needed to better understand and inform the public about the nature of the ambient air quality problems in California.

Not all pollutants are monitored at all sites, although most sites monitor for multiple pollutants. The State and local air quality agencies in California make the effort to only collect data that is needed from each site. The needs for the monitoring data are varied. A sense for this can be gathered from the information on monitoring objectives and purposes in the next section of this report. A fundamental purpose of monitoring is to distinguish between areas where pollutant levels violate the ambient air quality standards and areas where they do not. Health-based ambient air quality standards are set at levels of pollutant concentrations that protect against adverse impacts to human health. Areas in violation of a standard usually have increased efforts to reduce the sources of pollution that result in the exceedances. In other words, air quality agencies develop strategies and regulations to achieve needed emission reductions. Data from the ambient monitoring network are then used to indicate the success of this, in terms of the rate of progress towards attaining the standards or to show that standards have been attained.

Section 3. Site and Monitoring Information

This section details monitoring information for the sites and monitors that fall within the geographical scope of this report. U.S. EPA requires three types of information to be included in the annual network plans. These are: federal site type, federal monitoring objective, and federal monitor type. The first three subsections, below, describe these federal monitoring requirements. The fourth subsection provides detail on state and local monitoring purposes, which encompass a broader scope of active program areas than the federal monitoring requirements.

Federal Site type

Monitoring sites must be capable of informing air quality program managers about many things including the peak air pollution levels, typical levels in populated areas, air pollution transported into and outside of a city or region, air pollution levels near specific sources. For these reasons, U.S. EPA requires that each monitor at a site be designated, at a minimum, with one of the twelve site types that are established in the Air Quality System (AQS) database. The twelve site types are:

- →Extreme Downwind
- →Highest Concentration
- →Population Exposure
- →Upwind Background
- →Regional Transport
- →Quality Assurance
- →Max Ozone Concentration
- →Max Precursor Emissions Impacts
- →Source Oriented
- →Welfare Related Impacts
- →General
- →Other

While most of the site types are specific to a monitoring purpose, for example population exposure, two site types are general in nature and could be used for broad purposes (i.e., General and Other). States are encouraged not to use the general or other categories unless no other options are appropriate. U.S. EPA requires that a monitor be properly designated with an appropriate site type so that the data collected by the monitor at a site can be used to support the three basic federal monitoring objectives, which are discussed in more detail below. The site type of the monitors covered in this report is included in Table 3.

Federal Monitoring Objective

An ambient air monitoring network must be designed to meet three basic federal monitoring objectives, which are:

1) to provide air quality data to the public in a timely manner;
2) to support compliance with national air quality standards; and
3) to support air quality research studies.

For purposes of this report, the monitoring objectives are the federal *monitoring objectives* defined in Appendix D of 40 CFR 58. Federal monitoring regulations required that each monitor measuring criteria pollutants have at least one monitoring objective. However, many air quality agencies operate monitors with multiple objectives in mind. For example, monitoring is conducted to provide both air quality data to the public as well as to support air quality standards. The federal monitoring objective of the monitors covered in this report is included in Table 3.

Federal Monitor Type

U.S. EPA requires that every state establish a network of air monitoring stations for criteria pollutants, using criteria set in the CFR for the monitoring stations' location and operation. The monitoring stations in this network are called the State and Local Air Monitoring Stations (SLAMS). In addition, U.S. EPA requires state and local monitoring agencies to establish monitoring stations to measure approximately 60 volatile hydrocarbons and carbonyls, which plays an integral role in ozone studies. These stations are called the Photochemical Assessment Monitoring Stations (PAMS). A third type of monitor, the Special Purpose Monitor (SPM), is used by state and local monitoring agencies to fulfill very specific or short-term monitoring goals. While there are a total of fifteen monitor types established by U.S. EPA, SLAMS, PAMS, and SPM are the three most common monitor types used by state and local monitoring agencies in California. Table 3 lists the monitor type of each monitor that is covered in this report. All of the regulatory monitors included in this report are part of the SLAMS network in California. The completed list of monitor types is listed at the end of Table 3.

State and Local Monitoring Purposes

There are a number of monitoring purposes besides the federal classifications. These are directly related to the needs of state and local agencies. California has a very comprehensive monitoring network that is needed for implementing a variety of programs. Listed below are some of the most common state and local monitoring purposes:

- *Agricultural Burning* refers to the intentional use of fire for vegetation management, both in agricultural settings, such as fields and orchards, as well as in wildlands, including rangeland and forests, to improve land for wildlife and game habitat or as a tool for disease or pest prevention. Monitors with this purpose are used to assess when and where burning can occur.

- *Expected High Concentration* monitoring is used to measure pollutant concentrations in areas where air pollution is expected to be at its highest. The State designation criteria contain the requirement for this type of monitoring in order to show that an area attains the State air quality standards. During the State area designation process, the data from all

monitors in an area are examined, but only the data from the monitors with the highest concentrations will determine the designation of the area.

- The *Geyser Air Monitoring Program (GAMP)* was established to monitor ambient air quality in geothermal areas, mainly monitoring for hydrogen sulfide.

- *Residential Burning* or backyard burning is the open burning of yard wastes by household residents. Backyard burning includes dry weeds, plant pruning, shrubbery, tree trimmings, and branches. Data from monitors with this purpose help guide decisions regarding appropriate times to allow residential burning.

- *Representative Concentration* means locating a site to represent a geographical region with common topography and meteorology. These sites do not necessarily indicate the highest concentrations in the area for a particular pollutant. This is a purpose also listed by the U.S. EPA.

- *State Area Designation* monitoring is used to determine compliance with the State ambient air quality standards for a particular pollutant. Using the monitors with the highest concentrations of a particular pollutant, the ARB determines if the area is in attainment or nonattainment of the State air quality standards, as already described in the discussion of Expected High Concentration Monitoring.

- *State Implementation Plan (SIP) and/or Maintenance Plan Requirement* is monitoring conducted to demonstrate compliance with SIP requirements. The SIP is a plan prepared by states and submitted to the U.S. EPA describing how each area will attain federal air quality standards. Once an area attains a standard, the area is required to show and maintain that status, which requires continued monitoring in the area.

- *Trend Analysis* monitoring is useful for comparing and analyzing air pollution concentrations over time and distance. Usually, trend analyses show the progress or lack of progress in improving air quality for an area over a period of years. Some sites are more useful than others for trend analyses. For example, it is better to have a history of monitoring at a site that includes the full time period of a trend analysis.

This is not a comprehensive list of all state and local monitoring purposes, but only includes the most common purposes used for monitoring by air quality agencies in California. Note that the terms “objective” and “purpose” are almost analogous to one another and could be used interchangeably. However, to avoid confusion this report separates the monitoring objectives from the monitoring purposes by limiting the monitoring objectives to the three federal objectives as defined above and the monitoring purposes to the state and local monitoring purposes. The state and local monitoring purposes are more comprehensive

than the federal monitoring objectives. The state and local monitoring purpose of the monitors covered in this report is included in Table 3.

Summary of Table 3

Table 3 lists the federal site type, federal monitoring objective, federal monitor type, and state and local monitoring purposes of each monitor covered in this report. In addition, Table 3 lists other site and monitoring information, such as the AQS Site ID, site address, site name, pollutants monitored, and parameter codes. Note that the term "site type" refers to the individual monitor(s) at a site and not the site itself. U.S. EPA has determined that a single site type may not describe all of the monitors at a particular site; therefore, U.S. EPA established the site type designations at the monitor level, rather than the site level. Also note that a monitor can have multiple site type, monitoring objective, monitor type, or monitoring purpose designations.

Finally, Table 3 also lists the location of each monitor, including the Core-Based Statistical Area (CBSA) in which the monitor is located. CBSAs are defined by the United States Office of Management and Budget (OMB) and provide a consistent set of geographical areas for Federal agencies to use in collecting, tabulating, and publishing statistical data. Two types of areas are included as CBSAs: Metropolitan Statistical Areas and Micropolitan Statistical Areas. The difference between a Metropolitan and Micropolitan statistical area is the level of population. A Metropolitan Statistical Area has an urban core with a population of 50,000 or more, whereas a Micropolitan Statistical Area has an urban core with a population of at least 10,000, but less than 50,000. Both Metropolitan and Micropolitan statistical areas comprise one or more counties.

U.S. EPA specifies the number of monitors required for each pollutant based on the OMB statistical areas. Older standards, such as the federal ozone standard, specify required monitors based on Metropolitan Statistical Area and Micropolitan Statistical Area. More recent standards, such as the federal SO_2 standard, use the newer collective term, CBSA. Because it is more current, the term CBSA is used in this report, as well. A comprehensive CBSA list for California is provided in Table 6a and Figure 2 of this report. Also in Table 6a is information about CBSAs that are not covered in this plan, but are covered either in part or in whole, in other individual district plans.

Table 3
Site and Monitoring Information
(Monitors reporting data in 2013)

Station/Address/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
LAKE COUNTY AIR BASIN							
Lake County / CBSA: Clearlake Micropolitan Statistical Area							
Middletown-Anderson Springs Road**	Site Type:						Gnrl
11270 Anderson Springs Road, Middletown	Monitoring Obj.:						RSupport
060333010	Monitoring Purp.:						StateD, GAMP
	Monitor Type:						SLAMS
Glenbrook-High Valley Road**	Site Type:						Gnrl
8276 High Valley Road, Cobb	Monitoring Obj.:						RSupport
060333011	Monitoring Purp.:						StateD, GAMP
	Monitor Type:						SLAMS
Lakeport-Lakeport Blvd**	Site Type:	Gnrl				Gnrl	Gnrl
905 Lakeport Blvd, Lakeport	Monitoring Obj.:	NAAQS				NAAQS	NAAQS
060333001	Monitoring Purp.:	StateD				StateD	StateD
	Monitor Type:	SLAMS				SLAMS	SLAMS
LAKE TAHOE AIR BASIN							
El Dorado County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
South Lake Tahoe-Sandy Way	Site Type:						(PopEx)
3337 Sandy Way, South Lake Tahoe	Monitoring Obj.:						(NAAQS/PublicR)
060170011	Monitoring Purp.:						(RConc)
	Monitor Type:						(SLAMS)
MOJAVE DESERT AIR BASIN							
Kern County / CBSA: Bakersfield Metropolitan Statistical Area							
Canebrake-3147 Highway 178	Site Type:						PopEx
3147 Highway 178, Canebrake	Monitoring Obj.:						NAAQS
060290017	Monitoring Purp.:						RConc
	Monitor Type:						SLAMS
Mojave-923 Poole Street	Site Type:	HConc				(PopEx)	(PopEx)
923 Poole Street, Mojave	Monitoring Obj.:	NAAQS				(NAAQS)	(NAAQS)
060290011	Monitoring Purp.:	SIPMain, Trans				(StateD)	(StateD)
	Monitor Type:	SLAMS				(SLAMS)	(SLAMS)
Ridgecrest-100 West California Avenue	Site Type:					PopEx	PopEx
100 West California Avenue, Ridgecrest	Monitoring Obj.:					NAAQS	NAAQS
060290015	Monitoring Purp.:					StateD, RConc	SIPMain, StateD
	Monitor Type:					SLAMS	SLAMS
Los Angeles County / CBSA: Los Angeles-Long Beach-Anahiem Metropolitan Statistical Area							
Lancaster-43301 Division Street	Site Type:	Trans	Gnrl	Gnrl		HConc	(Gnrl)
43301 Division Street, Lancaster	Monitoring Obj.:	NAAQS	NAAQS	NAAQS		NAAQS	(NAAQS/PublicR)
060379033	Monitoring Purp.:	Trnds	RConc	RConc		RConc	(RConc)
	Monitor Type:	SLAMS	SLAMS	SLAMS		SLAMS	(SLAMS)
Riverside County / CBSA: Riverside-San Bernardino-Ontario Metropolitan Statistical Area							
Blythe-445 W Murphy Street	Site Type:	Gnrl					
445 W Murphy Street, Blythe	Monitoring Obj.:	NAAQS/PublicR					
060659003	Monitoring Purp.:	RConc					
	Monitor Type:	SLAMS					
San Bernardino County / CBSA: Riverside-San Bernardino-Ontario Metropolitan Statistical Area							
Barstow-200 E Buena Vista Road	Site Type:	Trans	Gnrl	Gnrl			(Gnrl)
200 E Buena Vista Road, Barstow	Monitoring Obj.:	NAAQS	NAAQS	NAAQS			(NAAQS)
060710001	Monitoring Purp.:	StateD	StateD	StateD			(StateD)
	Monitor Type:	SLAMS	SLAMS	SLAMS			(SLAMS)
Hesperia-Olive Street	Site Type:	Trans					(Gnrl)
17288 Olive Street, Hesperia	Monitoring Obj.:	NAAQS					(NAAQS)
060714001	Monitoring Purp.:	StateD					(StateD)
	Monitor Type:	SLAMS					(SLAMS)

Table 3 (cont.)

Site and Monitoring Information
(Monitors reporting data in 2013)

Station/Address/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Joshua Tree National Mont.-Black Rock	Site Type:	PopEx					
060719002	Monitoring Obj.:	NAAQS/PublicR					
	Monitoring Purp.:	RConc					
	Monitor Type:	SLAMS					
Lucerne Valley-Middle School	Site Type:						Gnrl
8560 Aliento-Middle School, Lucerne Valley	Monitoring Obj.:						NAAQS
060710013	Monitoring Purp.:						StateD
	Monitor Type:						SLAMS
Phelan-Beekley and Phelan Roads	Site Type:	Trans					
Beekley Road and Phelan Road, Phelan	Monitoring Obj.:	NAAQS					
060710012	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Trona-Athol and Telescope	Site Type:	Gnrl		Gnrl	Gnrl		(HConc)
Corner of Athol and Telescope, Trona	Monitoring Obj.:	NAAQS		NAAQS	NAAQS		(NAAQS)
060711234	Monitoring Purp.:	StateD		StateD	StateD		(StateD)
	Monitor Type:	SLAMS		SLAMS	SLAMS		(SLAMS)
Victorville-14036 Park Avenue	Site Type:	Trans	Gnrl	Gnrl	Gnrl	Gnrl	(PopEx)
14036 Park Avenue, Victorville	Monitoring Obj.:	NAAQS	NAAQS	NAAQS	NAAQS	NAAQS	(NAAQS)
060710306	Monitoring Purp.:	StateD	StateD	StateD	StateD	StateD	(StateD)
	Monitor Type:	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS	(SLAMS)
MOUNTAIN COUNTIES AIR BASIN							
Amador County / Not in a CBSA							
Jackson-201 Clinton Road	Site Type:	Gnrl/Trans					
201 Clinton Road, Jackson	Monitoring Obj.:	NAAQS					
060050002	Monitoring Purp.:	StateD/SIPMain					
	Monitor Type:	SLAMS					
Calaveras County / Not in a CBSA							
San Andreas-501 Gold Strike Road	Site Type:	Gnrl/Trans				(Gnrl)	Gnrl
501 Gold Strike Road, San Andreas	Monitoring Obj.:	NAAQS				(NAAQS/PublicR)	NAAQS
060090001	Monitoring Purp.:	StateD/SIPMain				(RConc)	StateD
	Monitor Type:	SLAMS				(SPM)	SLAMS
El Dorado County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
Cool-Highway 193	Site Type:	HConc					
1400 American River Trail, Cool	Monitoring Obj.:	NAAQS					
060170020	Monitoring Purp.:	SIPMain					
	Monitor Type:	SLAMS					
Echo Summit	Site Type:	Trans					
21200 Highway 50-Little Norway	Monitoring Obj.:	NAAQS					
060170012	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Placerville-Gold Nugget Way	Site Type:	HConc/Trans					
3111 Gold Nugget Way, Placerville	Monitoring Obj.:	NAAQS					
060170010	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Mariposa County / Not in a CBSA							
Jerseydale-6440 Jerseydale	Site Type:	Trans					
6440 Jerseydale Road, Jerseydale	Monitoring Obj.:	NAAQS					
060430006	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Yosemite National Park-Turtleback Dome	Site Type:	HConc/Trans					
060430003	Monitoring Obj.:	NAAQS					
	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Yosemite Village-Visitor Center	Site Type:						Gnrl
060431001	Monitoring Obj.:						NAAQS
	Monitoring Purp.:						StateD
	Monitor Type:						SLAMS

Table 3 (cont.)

Site and Monitoring Information
(Monitors reporting data in 2013)

Station/Address/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Nevada County / CBSA: Truckee-Grass Valley Micropolitan Statistical Area							
Grass Valley-Litton Building	Site Type:	HConc/Trans				PopEx	
200 Litton Drive, Grass Valley	Monitoring Obj.:	NAAQS				NAAQS	
060570005	Monitoring Purp.:	StateD/Trnds				StateD	
	Monitor Type:	SLAMS				SLAMS	
Truckee-Fire Station	Site Type:					Hconc	
10049 Donner Pass Road, Truckee	Monitoring Obj.:					NAAQS	
060571001	Monitoring Purp.:					StateD	
	Monitor Type:					SLAMS	
White Cloud Mountain	Site Type:	Gnrl					
26533 State Highway 20, White Cloud Mtn.	Monitoring Obj.:	NAAQS					
060570007	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Placer County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
Colfax-City Hall	Site Type:	Gnrl					Gnrl
33 South Main Street, Colfax	Monitoring Obj.:	NAAQS					NAAQS
060610004	Monitoring Purp.:	StateD					StateD
	Monitor Type:	SLAMS					SLAMS
Plumas County / Not in a CBSA							
Portola-420 N Gulling St	Site Type:					HConc	
420 N Gulling Street, Portola	Monitoring Obj.:					NAAQS	
060631010	Monitoring Purp.:					StateD	
	Monitor Type:					SLAMS	
Quincy-N Church Street	Site Type:					Hconc	
267 North Church Street, Quincy	Monitoring Obj.:					NAAQS	
060631006	Monitoring Purp.:					StateD	
	Monitor Type:					SLAMS	
Tuolumne County / CBSA: Phoenix Lake-Cedar Ridge Micropolitan Statistical Area							
Sonora-Barretta Street	Site Type:	Gnrl					
251 South Barretta Street, Sonora	Monitoring Obj.:	NAAQS					
061090005	Monitoring Purp.:	StateD/SIPMain					
	Monitor Type:	SLAMS					
NORTH COAST AIR BASIN							
Mendocino County / CBSA: Ukiah Micropolitan Statistical Area							
Fort Bragg-Dana Street	Site Type:						(Gnrl)
300 Dana Street, Fort Bragg	Monitoring Obj.:						(NAAQS)
060450010	Monitoring Purp.:						(RConc)
	Monitor Type:						(SLAMS)
Ukiah-County Library	Site Type:					(Gnrl)	
105 North Main Street, Ukiah	Monitoring Obj.:					(NAAQS)	
060450006	Monitoring Purp.:					(RConc)	
	Monitor Type:					(SLAMS)	
Ukiah-East Gobbi Street	Site Type:	Trans					
306 East Gobbi Street, Ukiah	Monitoring Obj.:	NAAQS					
060450008	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Willits-125 East Commercial Street	Site Type:					(Gnrl)	
125 East Commercial Street, Willits	Monitoring Obj.:					(NAAQS)	
060452002	Monitoring Purp.:					(RConc)	
	Monitor Type:					(SLAMS)	
Sonoma County / CBSA: Santa Rosa Metropolitan Statistical Area							
Cloverdale-100 Washington Street	Site Type:						Gnrl
100 Washington Street, Colverdale	Monitoring Obj.:						NAAQS
060970001	Monitoring Purp.:						AgBn, ResBn
	Monitor Type:						SLAMS
Guerneville-Church and 1st	Site Type:						Gnrl
16255 1st Street, Guerneville	Monitoring Obj.:						NAAQS
060973002	Monitoring Purp.:						AgBn, ResBn
	Monitor Type:						SLAMS

Table 3 (cont.)

Site and Monitoring Information
(Monitors reporting data in 2013)

Station/Address/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Healdsburg-133 Matheson Street	Site Type:						HConc
133 Matheson Street, Healdsburg	Monitoring Obj.:						NAAQS
060970002	Monitoring Purp.:						AgBn, ResBn
	Monitor Type:						SLAMS
Healdsburg-Municipal Airport	Site Type:	Gnrl					
200a Heidelberg Way, Healdsburg	Monitoring Obj.:	NAAQS					
060971003	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
NORTHEAST PLATEAU AIR BASIN							
Siskiyou County / Not in a CBSA							
Yreka-Foothill Drive	Site Type:	Gnrl/Trans				Gnrl	Gnrl
528 Foothill Drive, Yreka	Monitoring Obj.:	NAAQS/PublicR				NAAQS	NAAQS
060932001	Monitoring Purp.:	StateD				StateD	AgBn/StateD
	Monitor Type:	SLAMS				SLAMS	SLAMS
SACRAMENTO VALLEY AIR BASIN							
Butte County / CBSA: Chico Metropolitan Statistical Area							
Chico-East	Site Type:	Gnrl	Gnrl	Gnrl		HConc	HConc
984 East Avenue, Chico	Monitoring Obj.:	NAAQS	NAAQS	NAAQS		NAAQS	NAAQS
060070008	Monitoring Purp.:	StateD/AgBn	StateD	StateD		StateD	StateD/AgBn
	Monitor Type:	SLAMS	SLAMS	SLAMS		SLAMS	SLAMS
Paradise-4405 Airport Road	Site Type:	Gnrl/HConc					
4405 Airport Road, Paradise	Monitoring Obj.:	NAAQS					
060070007	Monitoring Purp.:	StateD/AgBn					
	Monitor Type:	SLAMS					
Colusa County/ Not in a CBSA							
Colusa-Sunrise Blvd	Site Type:	Gnrl				Gnrl	Gnrl
100 Sunrise Blvd, Colusa	Monitoring Obj.:	NAAQS				NAAQS	NAAQS
060111002	Monitoring Purp.:	StateD/AgBn				StateD	StateD/AgBn
	Monitor Type:	SLAMS				SLAMS	SLAMS
Glenn County / Not in a CBSA							
Willows-Colusa Street	Site Type:	Gnrl					(Gnrl)
720 N Colusa Street, Willows	Monitoring Obj.:	NAAQS					(NAAQS)
060210003	Monitoring Purp.:	StateD/AgBn					(StateD/AgBn)
	Monitor Type:	SLAMS					(SLAMS)
Placer County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
Auburn-Atwood	Site Type:	Gnrl				(Gnrl)	
11645 Atwood Road, Auburn	Monitoring Obj.:	NAAQS				(NAAQS)	
060610003	Monitoring Purp.:	StateD				(StateD)	
	Monitor Type:	SLAMS				(SLAMS)	
Auburn-B Avenue	Site Type:						Gnrl
11464 B Ave, Auburn	Monitoring Obj.:						NAAQS
060610002	Monitoring Purp.:						StateD
	Monitor Type:						SLAMS
Lincoln-1st Street	Site Type:	Gnrl					
1445 1st Street, Lincoln	Monitoring Obj.:	NAAQS					
060612002	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Tahoe City	Site Type:	Gnrl					
221 Fairway Drive, Tahoe City	Monitoring Obj.:	NAAQS					
060611004	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Roseville-N Sunrise Blvd	Site Type:	Gnrl		Gnrl		Trans	Gnrl
151 N Sunrise Blvd, Roseville	Monitoring Obj.:	NAAQS		NAAQS		NAAQS	NAAQS
060610006	Monitoring Purp.:	StateD/AgBn		StateD		StateD	StateD/AgBn
	Monitor Type:	SLAMS		SLAMS		SLAMS	SLAMS

Table 3 (cont.)

Site and Monitoring Information
(Monitors reporting data in 2013)

Station/Address/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Shasta County / CBSA: Redding Metropolitan Statistical Area							
Anderson-North Street	Site Type:	Gnrl					HConc
2220 North Street, Anderson	Monitoring Obj.:	NAAQS					NAAQS
060890007	Monitoring Purp.:	StateD					StateD
	Monitor Type:	SLAMS					SLAMS
Lassen Volcanic Natl Park-Manzanita Lake	Site Type:	Gnrl					
060893003	Monitoring Obj.:	NAAQS					
	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Redding-Health Department Roof***	Site Type:	Gnrl				HConc	Gnrl
2630 Hospital Lane, Redding	Monitoring Obj.:	NAAQS				NAAQS	NAAQS
060890004	Monitoring Purp.:	StateD				StateD	StateD
	Monitor Type:	SLAMS				SLAMS	SLAMS
Shasta Lake-13791 Lake Blvd	Site Type:	HConc					
13791 Lake Blvd, Shasta Lake	Monitoring Obj.:	NAAQS					
060890009	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Shasta Lake-4066 La Mesa Avenue	Site Type:						Gnrl
4066 La Mesa Avenue, Shasta Lake	Monitoring Obj.:						NAAQS
060890008	Monitoring Purp.:						StateD
	Monitor Type:						SLAMS
Solano County / CBSA: Vallejo-Fairfield Metropolitan Statistical Area							
Vacaville-Merchant Street	Site Type:						HConc
650 Merchant Street, Vacaville	Monitoring Obj.:						NAAQS
060953001	Monitoring Purp.:						StateD
	Monitor Type:						SLAMS
Vacaville-Ulatis Drive	Site Type:	Gnrl					
2012 Ulatis Drive, Vacaville	Monitoring Obj.:	NAAQS					
	Monitor Type:	SLAMS					
Sutter County / CBSA: Yuba City Metropolitan Statistical Area							
Sutter Buttes-S Buttes	Site Type:	HConc/Trans					
061010004	Monitoring Obj.:	NAAQS					
	Monitoring Purp.:	AgBn					
	Monitor Type:	SLAMS					
Yuba City-Almond Street	Site Type:	HConc		Gnrl		HConc	HConc
773 Almond Street, Yuba City	Monitoring Obj.:	NAAQS		NAAQS		NAAQS	NAAQS
061010003	Monitoring Purp.:	StateD/AgBn		StateD		StateD	StateD
	Monitor Type:	SLAMS		SLAMS		SLAMS	SLAMS
Tehama County / CBSA: Red Bluff Micropolitan Statistical Area							
Red Bluff-Main Street	Site Type:					(Gnrl)	
301 S Main Street, Red Bluff	Monitoring Obj.:					(NAAQS)	
061030006	Monitoring Purp.:					(RConc)	
	Monitor Type:					(SLAMS)	
Red Bluff-Oak Street	Site Type:	Gnrl					
502 Oak Street, Red Bluff	Monitoring Obj.:	NAAQS					
061030005	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					
Red Bluff-Messer Drive	Site Type:						Gnrl
700 Messer Drive, Red Bluff	Monitoring Obj.:						NAAQS
061030002	Monitoring Purp.:						StateD
	Monitor Type:						SLAMS
Tuscan Butte	Site Type:	Gnrl/Trans					
061030004	Monitoring Obj.:	NAAQS					
	Monitoring Purp.:	StateD					
	Monitor Type:	SLAMS					

Table 3 (cont.)

Site and Monitoring Information
(Monitors reporting data in 2013)

Station/Address/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Yolo County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
Davis-UCD Campus	Site Type:	Gnrl		Gnrl			
061130004	Monitoring Obj.:	NAAQS		NAAQS			
	Monitoring Purp.:	StateD/AgBn		StateD			
	Monitor Type:	SLAMS		SLAMS			
West Sacramento-15th Street	Site Type:						Gnrl
132 15th Street, West Sacramento	Monitoring Obj.:						NAAQS
061132001	Monitoring Purp.:						StateD
	Monitor Type:						SLAMS
Woodland-Gibson Road	Site Type:	Gnrl				PopEx	Gnrl
41929 E Gibson Road, Woodland	Monitoring Obj.:	NAAQS				NAAQS	NAAQS
061131003	Monitoring Purp.:	StateD				StateD	StateD/AgBn
	Monitor Type:	SLAMS				SLAMS	SLAMS

Notes:
This table only lists sites and monitors that have reported data in 2013. Lead monitors are not included in this list because there is no lead monitoring in the areas included in this report.

After a county name, the table lists the U.S. Office of Management and Budget's Core-Based Statistical Area (CBSA) that includes the county. The term CBSA includes both Metropolitan Statistical Areas and Micropolitan Statistical Areas. A Metropolitan Statistical Area has at least one urban area with a population of 50,000 or more. A Micropolitan Statistical Area has at least one urban area with a population of 10,000 to less than 50,000.

*Monitoring information inside a parenthesis ( ) in a PM column denotes that a continuous PM FEM monitor is located at the site. Monitoring information without a parenthesis reflects the filter-based PM FRM monitor.

**The filter-based PM10 FRM monitors at the Middletown, Glenbrook and Lakeport sites located in Lake County are reporting PM10 data in local conditions (i.e., 85101) and not in standard temperature and pressure (i.e., 81102).

***In addition to the Redding-Health Department site (060890004), there are also the Redding-Toyon and Redding-Buckeye sites located in the City of Redding. The Redding-Toyon and Redding-Buckeye sites are non-regulatory sites.

Codes used in Table 3

Site Types

ExDwn	Extreme downwind
HConc	Highest concentration
MaxO3	Max ozone concentration
MaxEm	Max precursor emmissions impact
PopEx	Population Exposure
Sourc	Source oriented
UpWin	Upwind background
Gnrl	General/Background
Trans	Regional transport
Welf	Welfare related impacts
QA	Quality Assurance
Other	Other

Federal Monitoring Objectives

PublicR	Provide air pollution data to public in a timely manner
NAAQS	NAAQS comparison
RSupport	Research support

Monitoring Purposes

EHConc	Monitoring at expected high concentration sites relative to California Ambient Air Quality Standards
RConc	Representative concentrations
AgBn	Support agricultural/prescribed burn decisions
ResBn	Support residential burn program
Trnds	Trends analysis
StateD	Support State area designation
SIPMain	State Implementation Plan (SIP) maintance requirement
GAMP	Geyser Air Monitoring Program

Monitor Types

Impr	Improve
Indx	Index site
Indus	Industrial
NATTS	NATTS
NonEPA	Non-EPA federal
NonReg	Non-regulatory
PAMS	PAMS
NCore	Proposed Ncore
QAcoll	QA collocated
SLAMS	SLAMS
SPM	Special purpose
SupSP	Supplemental speciation
TrnSP	Trends speciation
Tribal	Tribal monitors
UnPAMS	Unofficial PAMS

Section 4. Additional Information about the Monitors

U.S. EPA regulations require that the annual network plan list specific additional information about the monitors that characterize the nature and location of the monitoring. Table 4 lists the spatial scales, sampling methods, method codes, parameter occurrence codes (POC) and start dates of the monitors that are included in this report. Also included in Table 4 are the geographical coordinates of the monitoring sites. Note that the continuous PM FEM monitors are listed in parenthesis in the PM columns in Table 4. At the end of Table 4, the codes used for the spatial scales, sampling methods, and method codes are defined as well as a brief explanation of the POC.

The regulations also require that the annual network plan list the laboratory analysis methods of the monitors. However, there is no separate analysis method for the gaseous monitors and continuous PM monitors. For the filter-based PM monitors, only simple mass weighing is done. Moreover, the regulations require that the network plan include distance from road information, groundcover of the monitoring sites, probe heights of the monitoring instruments, materials used for monitoring, and distance from obstructions information.

The monitoring information for groundcover, distance from road/obstruction, probe heights and monitoring instrument/material is not included at this time. Previous network plans included this information; however, U.S. EPA determined that some of the information was inadequate and needs to be updated. For this reason, U.S. EPA, ARB, districts, and a contractor are in the process of developing a statewide database to collect and store current site and monitoring information for all of the monitoring sites in California. Once this database is complete, which is anticipated to be available for use in 2015, this required site and monitoring information will be included in the ARB network plan. In the interim, older information can be viewed via ARB's site surveys at: www.arb.ca.gov/qaweb/site.php.

Finally, additional information on continuous $PM_{2.5}$ non-FEM monitors is provided on page 26 and in Table 5.

Table 4
Additional Information about the Monitors
(Monitors reporting data in 2013)

Station/Geographical Coordinates/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
LAKE COUNTY AIR BASIN							
Lake County / CBSA: Clearlake Micropolitan Statistical Area							
Middletown-Anderson Springs Road**	Spatial Scale:						NGH
38.7744, -122.6994	Samp. Method:						SCH, XG
060333010	Mthd. Code/POC:						098 / 1
	Start Date:						1-1-2005
Glenbrook-High Valley Road**	Spatial Scale:						NGH
38.8502, -122.7361	Samp. Method:						SCH, XG
060333011	Mthd. Code/POC:						098 / 1
	Start Date:						1-1-2005
Lakeport-Lakeport Blvd**	Spatial Scale:	URB				URB	URB
39.0330, -122.9219	Samp. Method:	UV				SCH	SCH
060333001	Mthd. Code/POC:	087 / 1				117 / 1	098 / 2
	Start Date:	1-1-1980				1-1-1999	4-1-2001
LAKE TAHOE AIR BASIN							
El Dorado County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
South Lake Tahoe-Sandy Way	Spatial Scale:						(NGH)
38.9450, -119.9703	Samp. Method:						(BAM)
060170011	Mthd. Code/POC:						(122 / 2)
	Start Date:						(6-1-2001)
MOJAVE DESERT AIR BASIN							
Kern County / CBSA: Bakersfield Metropolitan Statistical Area							
Canebrake-3147 Highway 178	Spatial Scale:						REG
35.7277, -118.1393	Samp. Method:						SI
060290017	Mthd. Code/POC:						141 / 1
	Start Date:						1/1/2009
Mojave-923 Poole Street	Spatial Scale:	REG				(NGH)	(REG)
35.0503, -118.1478	Samp. Method:	UV				(BAM)	(BAM)
060290011	Mthd. Code/POC:	087 / 1				(170 / 3)	(122 / 3)
	Start Date:	8-1-1993				(4-1-2011)	(4-1-2011)
Ridgecrest-100 West California Avenue	Spatial Scale:					NGH	NGH
35.6211, -117.6731	Samp. Method:					SI	SI
060290015	Mthd. Code/POC:					118 / 1	063 / 1
	Start Date:					6-1-1999	12-15-1999
Los Angeles County / CBSA: Los Angeles-Long Beach-Anahiem Metropolitan Statistical Area							
Lancaster-43301 Division Street	Spatial Scale:	MID	MID	MID		NGH	(NGH)
34.6713, -118.1305	Samp. Method:	UV	IR	CL		SQ	(BAM)
060379033	Mthd. Code/POC:	087 / 1	093 / 1	099 / 1		117 / 1	(122 / 2)
	Start Date:	11-1-2001	11-1-2001	11-1-2001		11-1-2001	(11-1-01)
Riverside County / CBSA: Riverside-San Bernardino-Ontario Metropolitan Statistical Area							
Blythe-445 W Murphy Street	Spatial Scale:	NGH					
33.6119, -114.6000	Samp. Method:	UV					
060659003	Mthd. Code/POC:	087 / 1					
	Start Date:	5-1-2003					
San Bernardino County / CBSA: Riverside-San Bernardino-Ontario Metropolitan Statistical Area							
Barstow-200 E Buena Vista Road	Spatial Scale:	NGH	NGH	NGH			(NGH)
34.8938, -117.0244	Samp. Method:	UV	IR	CL			(BAM)
060710001	Mthd. Code/POC:	087 / 1	093 / 1	099 / 1			(122/ 1)
	Start Date:	1-1-1974	1-1-1973	1-1-1973			(1-1-2014)
Hesperia-Olive Street	Spatial Scale:	NGH					(NGH)
34.4158, -117.2861	Samp. Method:	UV					(BAM)
060714001	Mthd. Code/POC:	087 / 1					(122/1)
	Start Date:	1-1-1980					(1-1-2014)

Table 4 (cont.)
Additional Information about the Monitors
(Monitors reporting data in 2013)

Station/Geographical Coordinates/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Joshua Tree National Mont.-Black Rock	Spatial Scale:	REG					
34.0694, -116.3888	Samp. Method:	UV					
060719002	Mthd. Code/POC:	047 / 1					
	Start Date:	10/1/1993					
Lucerne Valley-Middle School	Spatial Scale:						NGH
34.4103, -116.9067	Samp. Method:						SI
060710013	Mthd. Code/POC:						063 / 1
	Start Date:						6-1-1989
Phelan-Beekley and Phelan Roads	Spatial Scale:	NGH					
34.4250, -117.5897	Samp. Method:	UV					
060710012	Mthd. Code/POC:	087 / 1					
	Start Date:	7-1-1987					
Trona-Athol and Telescope	Spatial Scale:	REG		NGH	REG		(NGH)
35.7744, -117.3722	Samp. Method:	UV		CL	FL		(BAM)
060711234	Mthd. Code/POC:	087 / 1		099 / 1	077 / 1		(122/ 2)
	Start Date:	4-1-1997		4-1-1997	4-1-1997		(1-1-2013)
Victorville-14036 Park Avenue	Spatial Scale:	NGH	NGH	NGH	NGH	NGH	(NGH)
34.5122, -117.3250	Samp. Method:	UV	IR	CL	FL	SQ	(BAM)
060710306	Mthd. Code/POC:	087 / 1	093 / 1	099 / 1	077 / 1	117 / 1	(122 / 2)
	Start Date:	1-1-2000	1-1-2000	1-1-2000	1/1/2000	1-1-2000	(1-1-2013)
MOUNTAIN COUNTIES AIR BASIN							
Amador County / Not in a CBSA							
Jackson-201 Clinton Road	Spatial Scale:	URB					
38.3427, -120.7644	Samp. Method:	UV					
060050002	Mthd. Code/POC:	087 / 1					
	Start Date:	5-1-1992					
Calaveras County / Not in a CBSA							
San Andreas-501 Gold Strike Road	Spatial Scale:	REG				(REG)	REG
38.2019, -120.6802	Samp. Method:	UV				(BAM)	SI
060090001	Mthd. Code/POC:	087 / 1				(170 / 3)	063 / 1
	Start Date:	5-1-1994				(6-15-2010)	4-1-1994
El Dorado County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
Cool-Highway 193	Spatial Scale:	REG					
38.8906, -121.0000	Samp. Method:	UV					
060170020	Mthd. Code/POC:	087 / 1					
	Start Date:	6-1-1996					
Echo Summit	Spatial Scale:	REG					
38.8117, -120.0331	Samp. Method:	UV					
060170012	Mthd. Code/POC:	087 / 1					
	Start Date:	5-7-2006					
Placerville-Gold Nugget Way	Spatial Scale:	REG					
38.7247, -120.8219	Samp. Method:	UV					
060170010	Mthd. Code/POC:	087 / 1					
	Start Date:	2-1-1992					
Mariposa County / Not in a CBSA							
Jerseydale-6440 Jerseydale	Spatial Scale:	REG					
37.5466, -119.8416	Samp. Method:	UV					
060430006	Mthd. Code/POC:	087 / 1					
	Start Date:	7-1-1995					
Yosemite National Park-Turtleback Dome	Spatial Scale:	REG					
37.7133, -119.7058	Samp. Method:	UV					
060430003	Mthd. Code/POC:	047 / 1					
	Start Date:	11-1-1988					
Yosemite Village-Visitor Center	Spatial Scale:						NGH
37.7486, -119.5869	Samp. Method:						SI
060431001	Mthd. Code/POC:						063 / 2
	Start Date:						1-28-1989

Table 4 (cont.)
Additional Information about the Monitors
(Monitors reporting data in 2013)

Station/Geographical Coordinates/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Nevada County / CBSA: Truckee-Grass Valley Micropolitan Statistical Area							
Grass Valley-Litton Building	Spatial Scale:	URB				NGH	
39.2336, -121.0555	Samp. Method:	UV				SCH	
060570005	Mthd. Code/POC:	087 / 1				117 / 1	
	Start Date:	6-1-1993				12-30-98	
Truckee-Fire Station	Spatial Scale:					NGH	
39.3274, -120.1847	Samp. Method:					SQ	
060571001	Mthd. Code/POC:					118 / 1	
	Start Date:					3-31-99	
White Cloud Mountain	Spatial Scale:	REG					
39.3181, -120.8456	Samp. Method:	UV					
060570007	Mthd. Code/POC:	087 / 1					
	Start Date:	6-1-1995					
Placer County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
Colfax-City Hall	Spatial Scale:	URB					NGH
39.0997, -120.9541	Samp. Method:	UV					SI
060610004	Mthd. Code/POC:	087 / 1					063 / 1
	Start Date:	1-1-1992					1-1-2012
Plumas County / Not in a CBSA							
Portola-420 N Gulling St	Spatial Scale:					NGH	
39.8133, -120.4707	Samp. Method:					SCH	
060631010	Mthd. Code/POC:					118 / 1	
	Start Date:					1-18-07	
Quincy-N Church Street	Spatial Scale:					NGH	
39.9397, -120.9441	Samp. Method:					SQ	
060631006	Mthd. Code/POC:					118 / 1	
	Start Date:					3-26-99	
Tuolumne County / CBSA: Phoenix Lake-Cedar Ridge Micropolitan Statistical Area							
Sonora-Barretta Street	Spatial Scale:	NGH					
37.9819, -120.3786	Samp. Method:	UV					
061090005	Mthd. Code/POC:	087 / 1					
	Start Date:	7-1-1992					
NORTH COAST AIR BASIN							
Mendocino County / CBSA: Ukiah Micropolitan Statistical Area							
Fort Bragg-Dana Street	Spatial Scale:						(NGH)
39.4373, -123.7877	Samp. Method:						(BAM)
060450010	Mthd. Code/POC:						(122 / 1)
	Start Date:						(8-17-2011)
Ukiah-County Library	Spatial Scale:					(NGH)	
39.1511, -123.2066	Samp. Method:					(BAM)	
060450006	Mthd. Code/POC:					(170 / 3)	
	Start Date:					(12-31-2008)	
Ukiah-East Gobbi Street	Spatial Scale:	URB					
39.1447, -123.2002	Samp. Method:	UV					
060450008	Mthd. Code/POC:	087 / 1					
	Start Date:	8-1-1992					
Willits-125 East Commercial Street	Spatial Scale:					(NGH)	
39.4118, -123.3528	Samp. Method:					(BAM)	
060452002	Mthd. Code/POC:					(170 / 3)	
	Start Date:					(9-15-2009)	
Sonoma County / CBSA: Santa Rosa Metropolitan Statistical Area							
Cloverdale-100 Washington Street	Spatial Scale:						NGH
38.8047, -123.0177	Samp. Method:						SI
060970001	Mthd. Code/POC:						063 / 2
	Start Date:						1-1-1990
Guerneville-Church and 1st	Spatial Scale:						NGH
38.5016, -122.9977	Samp. Method:						SI
060973002	Mthd. Code/POC:						063 / 1
	Start Date:						4-1-1990

Table 4 (cont.)

Additional Information about the Monitors
(Monitors reporting data in 2013)

Station/Geographical Coordinates/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Healdsburg-133 Matheson Street	Spatial Scale:						NGH
38.6111, -122.8686	Samp. Method:						SI
060970002	Mthd. Code/POC:						063 / 2
	Start Date:						5-21-1988
Healdsburg-Municipal Airport	Spatial Scale:	URB					
38.6536, -122.9005	Samp. Method:	UV					
060971003	Mthd. Code/POC:	087 / 1					
	Start Date:	6-1-1991					
NORTHEAST PLATEAU AIR BASIN							
Siskiyou County / Not in a CBSA							
Yreka-Foothill Drive	Spatial Scale:	NGH				NGH	NGH
41.7267, -122.6336	Samp. Method:	UV				SQ	SI
060932001	Mthd. Code/POC:	087 / 1				117 / 1	063 / 2
	Start Date:	1-1-1981				8-21-2008	1-1-1988
SACRAMENTO VALLEY AIR BASIN							
Butte County / CBSA: Chico Metropolitan Statistical Area							
Chico-East	Spatial Scale:	URB	NGH	NGH		NGH	NGH
39.7616, -121.8405	Samp. Method:	UV	IR	CL		SCH	SI
060070008	Mthd. Code/POC:	087 / 1	593 / 1	099 / 3		118 / 1	063 / 1
	Start Date:	6-1-2012	6-1-2012	6-8-2012		4-27-12	5-27-2012
Paradise-4405 Airport Road	Spatial Scale:	REG					
39.7141, -121.6177	Samp. Method:	UV					
060070007	Mthd. Code/POC:	087 / 1					
	Start Date:	5-1-2000					
Colusa County / Not in a CBSA							
Colusa-Sunrise Blvd	Spatial Scale:	REG				NGH	REG
39.1888, -121.9980	Samp. Method:	UV				SQ	SI
060111002	Mthd. Code/POC:	087 / 1				118 / 1	063 / 2
	Start Date:	7-1-1996				12-16-98	5-1-1988
Glenn County / Not in a CBSA							
Willows-Colusa Street	Spatial Scale:	URB					(REG)
39.5172, -122.1897	Samp. Method:	UV					(BAM)
060210003	Mthd. Code/POC:	087 / 1					(122/1)
	Start Date:	9-13-2006					(10-1-2013)
Placer County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
Auburn-Atwood	Spatial Scale:	URB				(NGH)	
38.9356, -121.0995	Samp. Method:	UV				(BAM)	
060610003	Mthd. Code/POC:	087 / 1				(170 / 1)	
	Start Date:	6-24-2011				(6-24-2011)	
Auburn-B Avenue	Spatial Scale:						NGH
38.9394, -121.1055	Samp. Method:						SI
060610002	Mthd. Code/POC:						063 / 1
	Start Date:						1-1-2012
Lincoln-1st Street	Spatial Scale:	URB					
38.8856, -121.3020	Samp. Method:	UV					
060612002	Mthd. Code/POC:	087 / 1					
	Start Date:	12-21-2012					
Tahoe City	Spatial Scale:	URB					
39.1660, -120.1488	Samp. Method:	UV					
060611004	Mthd. Code/POC:	087 / 1					
	Start Date:	11-1-2013					
Roseville-N Sunrise Blvd	Spatial Scale:	URB		NGH		NGH	URB
38.7461, -121.2647	Samp. Method:	UV		CL		SCH	SI
060610006	Mthd. Code/POC:	087 / 1		099 / 1		117 / 1	063 /1
	Start Date:	1-13-1993		1-13-1993		12-31-98	1-13-1993

Table 4 (cont.)
Additional Information about the Monitors

(Monitors reporting data in 2013)

Station/Geographical Coordinates/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Shasta County / CBSA: Redding Metropolitan Statistical Area							
Anderson-North Street	Spatial Scale:	NGH					NGH
40.4531, -122.2986	Samp. Method:	UV					SI
060890007	Mthd. Code/POC:	087 / 1					063 / 1
	Start Date:	5-1-1993					5-1-1993
Lassen Volcanic Natl Park-Manzanita Lake	Spatial Scale:	REG					
40.5372, -121.5764	Samp. Method:	UV					
060893003	Mthd. Code/POC:	047 / 1					
	Start Date:	11-1-1987					
Redding-Health Department Roof***	Spatial Scale:	NGH				NGH	NGH
40.5514, -122.3808	Samp. Method:	UV				SCH	SI
060890004	Mthd. Code/POC:	087 / 1				117 / 1	063 / 2
	Start Date:	5-1-1990				12-19-1998	1-1-1988
Shasta Lake-13791 Lake Blvd	Spatial Scale:	NGH					
40.6894, -122.4011	Samp. Method:	UV					
060890009	Mthd. Code/POC:	087 / 1					
	Start Date:	4-1-2009					
Shasta Lake-4066 La Mesa Avenue	Spatial Scale:						REG
40.6775, -122.3733	Samp. Method:						SI
060890008	Mthd. Code/POC:						063 / 1
	Start Date:						1-1-2004
Solano County / CBSA: Vallejo-Fairfield Metropolitan Statistical Area							
Vacaville-Merchant Street	Spatial Scale:						URB
38.3516, -121.9933	Samp. Method:						SI
060953001	Mthd. Code/POC:						063 / 2
	Start Date:						1-1-1988
Vacaville-Ulatis Drive	Spatial Scale:	URB					
38.3583, -121.9500	Samp. Method:	UV					
060953003	Mthd. Code/POC:	087 / 1					
	Start Date:	7-21-2003					
Sutter County / CBSA: Yuba City Metropolitan Statistical Area							
Sutter Buttes-S Buttes	Spatial Scale:	REG					
39.1583, -121.7500	Samp. Method:	UV					
061010004	Mthd. Code/POC:	087 / 1					
	Start Date:	5-1-1993					
Yuba City-Almond Street	Spatial Scale:	URB		NGH		NGH	NGH
39.1388, -121.6191	Samp. Method:	UV		CL		SCH	SI
061010003	Mthd. Code/POC:	087 / 1		099 / 1		118 / 1	063 / 1
	Start Date:	10-1-1989		10-1-1989		12-19-98	12-1-1989
Tehama County / CBSA: Red Bluff Micropolitan Statistical Area							
Red Bluff-Main Street	Spatial Scale:					(NGH)	
40.1678, -122.2271	Samp. Method:					(BAM)	
061030006	Mthd. Code/POC:					(170 / 3)	
	Start Date:					(1-1-2009)	
Red Bluff-Oak Street	Spatial Scale:	URB					
40.1749, -122.2366	Samp. Method:	UV					
061030005	Mthd. Code/POC:	087 / 1					
	Start Date:	2-1-1996					
Red Bluff-Messer Drive	Spatial Scale:						NGH
40.1638, -122.2213	Samp. Method:						SI
061030002	Mthd. Code/POC:						063 / 2
	Start Date:						1-1-1998
Tuscan Butte	Spatial Scale:	REG					
40.2622, -122.0928	Samp. Method:	UV					
061030004	Mthd. Code/POC:	087 / 1					
	Start Date:	6-1-1995					

Table 4 (cont.)
Additional Information about the Monitors

(Monitors reporting data in 2013)

Station/Geographical Coordinates/AQS Site #		OZONE 44201	CO 42101	NO2 42602	SO2 42401	PM2.5* 88101	PM10* 81102
Yolo County / CBSA: Sacramento-Arden-Arcade-Roseville Metropolitan Statistical Area							
Davis-UCD Campus	Spatial Scale:	URB		NGH			
38.5352, -121.7730	Samp. Method:	UV		CL			
061130004	Mthd. Code/POC:	087 / 1		099 / 1			
	Start Date:	9-1-1987		5-21-1996			
West Sacramento-15th Street	Spatial Scale:						NGH
38.5713, -121.5258	Samp. Method:						SI
061132001	Mthd. Code/POC:						063 / 1
	Start Date:						9-1-1990
Woodland-Gibson Road	Spatial Scale:	URB				NGH	URB
38.6605, -121.7305	Samp. Method:	UV				SQ	SI
061131003	Mthd. Code/POC:	087 / 1				118 / 1	063 / 1
	Start Date:	5-27-1998				1-9-1999	10-26-1998

Notes:
This table only lists sites and monitors that have reported data in 2013. Lead monitors are not included in this list because there is no lead monitoring in the areas included in this report.

After a county name, the table lists the U.S. Office of Management and Budget's Core-Based Statistical Area (CBSA) that includes the county. The term CBSA includes both Metropolitan Statistical Areas and Micropolitan Statistical Areas. A Metropolitan Statistical Area has at least one urban area with a population of 50,000 or more. A Micropolitan Statistical Area has at least one urban area with a population of 10,000 to less than 50,000.

*Monitoring information inside a parenthesis ( ) in a PM column denotes that a continuous PM FEM monitor is located at the site. Monitoring information without a parenthesis reflects the filter-based PM FRM monitor.

**The filter-based PM10 FRM monitors at the Middletown, Glenbrook and Lakeport sites located in Lake County are reporting PM10 data in local conditions (i.e., 85101) and not in standard temperature and pressure (i.e., 81102).

***In addition to the Redding-Health Department site (060890004), there are also the Redding-Toyon and Redding-Buckeye sites located in the City of Redding. The Redding-Toyon and Redding-Buckeye sites are non-regulatory sites.

Codes used in Table 4

Spatial scales

MIC	Microscale
MID	Middle Scale
NGH	Neighborhood Scale
URB	Urban Scale
REG	Regional Scale

Sampling methods

CL	Chemiluminescent
FL	Fluoresecence
IR	Nondispersive infrared
SCH	Low volume single channel sampler, size selective inlet
SI	High volume sampler, size selective inlet
SQ	Low volume sequential sampler, size selective inlet
UV	Ultraviolet absorption
XG	X-ray fluorescence
BAM	Beta Attenuation Monitor
TEOM	Tapered Element Oscillating Microbalance Monitor

Method codes

047	Thermo Electron/Thermo Environmental Instr., Inc. Model 49, 49C, & 49i Ozone analyzer
063	Anderson-General Metal Works Model 1200 High Volume sampler
077	Advance Pollution Instruments Model 100 SO2 analyzer
087	Teledyne -Advance Pollution Instuments Model 400 or T400 Ozone analyzer
093	Advance Pollution Instruments Model 300, GFC CO analyzer
098	Rupprecht & Patashnick Partisol Model 2000 Air Sampler
099	Advance Pollution Instruments Model 200A NO analyzer
117	Rupprecht & Patashnick Model 2000 PM2.5 Air Sampler
118	Rupprecht & Patashnick Plus Model 2025PM SEQ PM2.5 Air sampler
122	Met One BAM/GBAM Model 1020 Monitor
141	Tisch EnvironmentalModel TE-6070 PM10 High-Volume Sampler
170	Met One BAM Model 1020 Monitor PM2.5 VSCC FEM
593	Advance Pollution Instruments Model 300 EU, GFC CO analyzer
731	Met One BAM-1020 Monitor W/PM2.5 SCC

Notes: POC stands for parameter occurrence code. This code is used to differentiate between the numbers of physical monitors at a site that measure for the same pollutant. For example, the PM_{10} monitors at a collocated PM_{10} site will use different POCs to differentiate between the primary and quality assurance PM_{10} monitors.

Information on the continuous $PM_{2.5}$ non-FEM monitors included in this plan

The CFR requires that monitors are FRM, FEM or ARM and meet certain siting criteria in order for the data to be used for NAAQS comparisons. While all continuous PM_{10} monitors included in this report are FEM monitors, there are some continuous $PM_{2.5}$ monitors that are non-FEMs. Table 5 lists the continuous $PM_{2.5}$ non-FEM monitoring sites that are covered in the geographical scope of this report. The continuous $PM_{2.5}$ data reported from these non-FEM monitors are excluded from NAAQS comparison. However, these non-FEM monitors are California Approved Samplers (CAS) and the data are used in AirNow for Air Quality Index reporting and are also used for State designations.

Table 5
Monitoring Sites Operating $PM_{2.5}$ Non-FEM monitors

Site Name	AQS Number
Chester-222 1st Avenue	060631007
Chico-East	060070008
Colfax-City Hall	060610004
Colusa-Sunrise Blvd	060111002
Davis-UCD Campus	061130004
Grass Valley-Litton Building	060570005
Gridley-Cowee Avenue	060074001
Lincoln-1st Street	060612002
Paradise-6701 Clark Road	060072002
Portola-420 N Gulling St	060631010
Quincy-N Church Street	060631006
Roseville-N Sunrise Blvd	060610006
Tahoe City	060611004
Truckee-Fire Station	060571001
Willows-E Laurel Street	060210003
Yosemite Village-Visitor Center	060431001
Yuba City-Almond Street	061010003

Section 5. Federal Minimum Monitoring Requirements

For most pollutants, U.S. EPA has established minimum monitoring requirements. These requirements are usually based on the CBSA along with considerations of population, emissions, or current air quality. Minimum monitoring requirements for ozone, $PM_{2.5}$, PM_{10}, PM-coarse, NO_2, SO_2, lead and chemical speciation will be discussed in this section. In contrast, there are also monitoring requirements that apply to an entire Primary Quality Assurance Organization (PQAO) or State or are based on ozone nonattainment classification, which will be discussed in the next section.

Federal Ozone, PM_{10}, and $PM_{2.5}$ Monitoring Requirements

Minimum monitoring requirements are specified in federal regulations (Appendix D of Title 40, Part 58 of the CFR). The requirements are based on the population of the CBSA and the severity of the air quality problem, as measured by the design value. Table 6 summarizes the required and existing ozone, $PM_{2.5}$ and PM_{10} monitors for the nine CBSAs covered in this report. In all cases, sufficient monitoring exists and no additional monitoring is required.

To provide a broader picture of California, Figure 2 and Table 6a provide a complete list of the CBSAs in California, including those covered in other district network plans. Note that ozone and PM monitoring are only required in Metropolitan areas and not in Micropolitan areas (Refer to detailed information on CBSA, Metropolitan and Micropolitan areas on page 10 of this report). Additional information on the ozone, $PM_{2.5}$, continuous $PM_{2.5}$ and PM_{10} monitoring requirements and compliance with federal requirements can be found in Appendix B of this report.

Finally, for $PM_{2.5}$, the CFR also requires near roadway monitoring in CBSAs with a population of one million or more. Several CBSAs covered by this network plan have a sufficiently high population to require a near roadway $PM_{2.5}$ monitor. The required monitors will be placed in the portion of the CBSA covered by districts preparing their own plan. For further information, refer to the following district plans:

- South Coast AQMD (Los Angeles-Long Beach-Anaheim and Riverside-San Bernardino-Ontario CBSAs)

- Sacramento Metropolitan AQMD (Sacramento-Arden Arcade-Roseville CBSA)

Table 6

Numbers of Required and Existing Sites by Core Based Statistical Area (CBSA)
(CBSAs that include the twenty-three air districts included in this report)

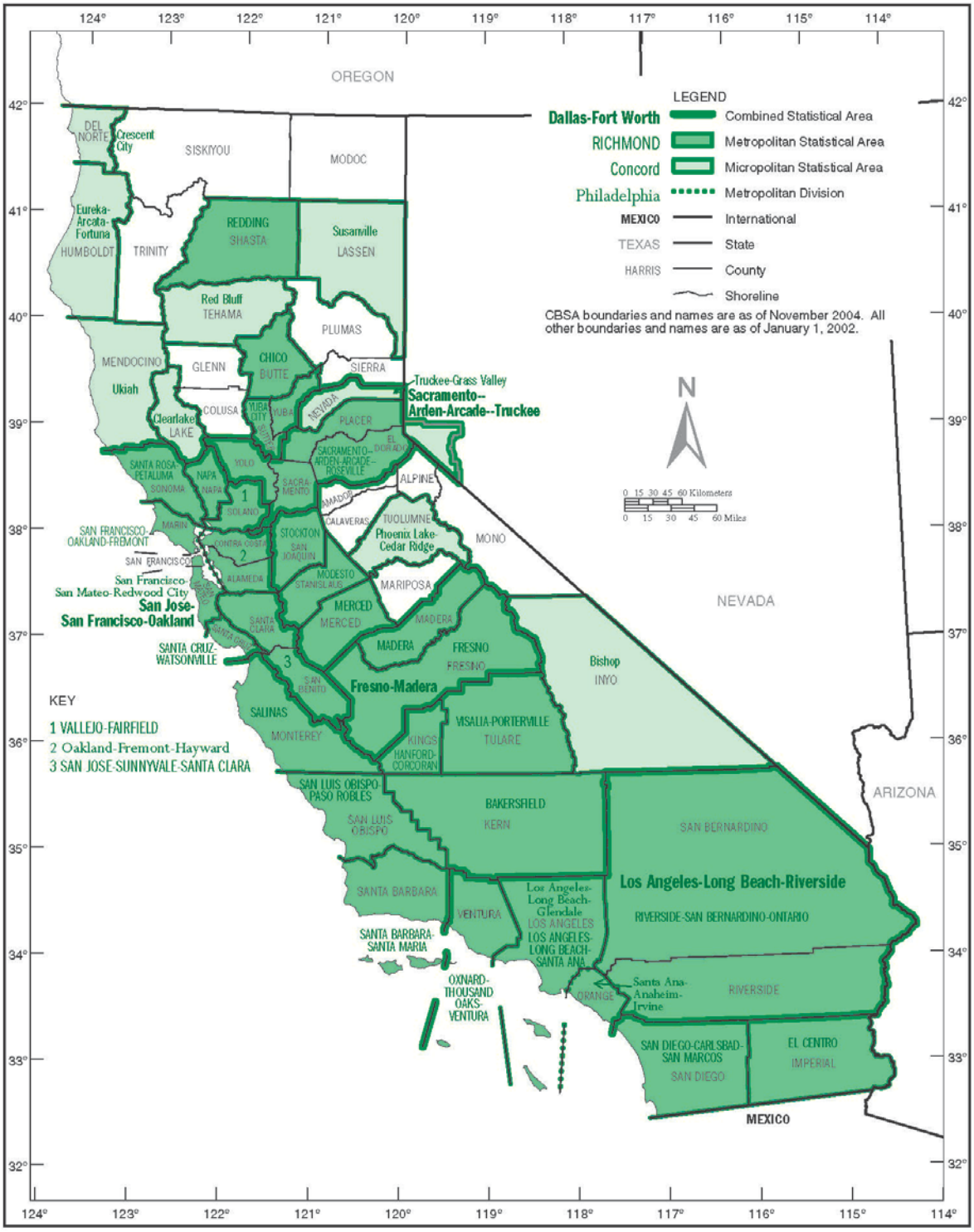
Core Based Statistical Area (CBSA)	Pop.	Ozone		PM2.5				PM10	
		Required sites	Existing sites	Required sites	Existing sites	Required Cont.[1]	Existing Cont.	Required sites	Existing sites
Bakersfield*	839,361	2	8	2	4	1	3	1-2	4
Chico	220,000	1	2	1	1	1	3	0	1
Los Angeles-Long Beach-Anaheim*	12,828,837	4	19	3	12	2	8	2-4	10
Redding	177,223	1	4	0	1	0	0	0	3
Riverside-San Bernardino-Ontario*	4,224,851	3	21	3	10	2	8	6-10	17
Sacramento-Arden Arcade-Roseville*	2,149,127	2	17	3	6	2	11	2-4	11
Santa Rosa*	483,878	1	2	0	1	0	1	0-1	3
Vallejo-Fairfield*	413,344	2	3	0	2	0	2	0-1	2
Yuba City	166,892	1	2	0	1	0	1	0	1

Notes:
2011-2013 air quality data was used in determining the number of required sites. In addition, the number of required sites includes both SLAMS and SPM monitors. This table excludes tribal monitoring sites. Population is based on year 2010 Census data.

*Parts of these CBSAs are included in the geographical scope of this report, and parts are within the geographical scope of reports being completed by the districts. The numbers of sites listed are for the entire CBSA. Table 6a shows the completed list of CBSAs in California.

[1]Continuous refers to a continuous $PM_{2.5}$ monitor, i.e., one that measures hourly data. For this assessment, both continuous FEM and non-FEM $PM_{2.5}$ monitors were counted for each CBSA.

Figure 2
Map showing the Core-Based Statistical Areas in California



Data Source: U.S. Census Bureau.
Note: The Los Angeles-Long Beach-Santa Ana CBSA was reclassified by OMB to the Los Angeles-Long Beach-Anaheim CBSA in February 2013.

Table 6a
Core-Based Statistical Areas in California (Metropolitan Areas)

CBSA Name	County(ies)	Included in the ARB plan?	Included in other District plan?
Bakersfield	Kern	Yes, Eastern Kern	San Joaquin Valley
Chico	Butte	Yes	--
El Centro	Imperial	No	Imperial
Fresno	Fresno	No	San Joaquin Valley
Hanford-Corcoran	Kings	No	San Joaquin Valley
Los Angeles-Long Beach-Anaheim	Los Angeles and Orange	Yes, Antelope Valley	South Coast
Madera	Madera	No	San Joaquin Valley
Merced	Merced	No	San Joaquin Valley
Modesto	Stanislaus	No	San Joaquin Valley
Napa	Napa	No	Bay Area
Oxnard-Thousand Oaks-Ventura	Ventura	No	Ventura County
Redding	Shasta	Yes	--
Riverside-San Bernardino-Ontario	Riverside and San Bernardino	Yes, Mojave Desert	South Coast
Sacramento-Roseville-Arden Arcade	El Dorado, Placer, Sacramento, and Yolo	Yes, Placer County; Yolo-Solano	Sacramento Metropolitan
Salinas	Monterey	No	Monterey Bay Unified
San Diego-Carlsbad	San Diego	No	San Diego County
San Francisco-Oakland-Hayward	Alameda, Contra Costa, Marin, San Francisco, and San Mateo	No	Bay Area
San Jose-Sunnyvale-Santa Clara	Santa Benito and Santa Clara	No	Bay Area
San Luis Obispo-Paso Robles-Arroyo Grande	San Luis Obispo	No	San Luis Obispo County
Santa Cruz-Watsonville	Santa Cruz	No	Monterey Bay Unified
Santa Maria-Santa Barbara	Santa Barbara	No	Santa Barbara County
Santa Rosa	Sonoma	Yes, Northern Sonoma	Bay Area
Stockton-Lodi	San Joaquin	No	San Joaquin Valley
Vallejo-Fairfield	Solano	Yes, Yolo-Solano	Bay Area
Visalia-Porterville	Tulare	No	San Joaquin Valley
Yuba City	Sutter and Yuba	Yes	--

Table 6a (cont.)
Core-Based Statistical Areas in California (Micropolitan Areas)

CBSA Name	County(ies)	Included in the ARB plan?	Included in other District plan?
Bishop	Inyo	No	Great Basin Unified
Clearlake	Lake	Yes	--
Crescent City	Del Norte	No	North Coast Unified
Eureka-Arcata-Fortuna	Humboldt	No	North Coast Unified
Phoenix Lake-Cedar Ridge	Tuolumne	Yes	--
Red Bluff	Tehama	Yes	--
Susanville	Lassen	Yes	--
Truckee-Grass Valley	Nevada	Yes	--
Ukiah	Mendocino	Yes	--

Federal Near-Road, Area-Wide and Susceptible Population NO_2 Monitoring Requirements

There are new federal requirements for NO_2 near roadway monitors that are applicable in California. However, none of the 23 districts covered in this report are required to deploy near roadway monitors. Near roadway monitors required for the Sacramento-Arden-Arcade-Roseville CBSA are being addressed by the Sacramento Metropolitan District. Near roadway monitors required for the Riverside-San Bernardino-Ontario and Los Angeles-Long Beach-Anaheim CBSAs are being addressed by the South Coast District. Near roadway monitors required for the San Diego-Carlsbad-San Marcos CBSA are being addressed by the San Diego County District. Near roadway monitors required for the Oxnard-Thousand Oaks-Ventura CBSA are being addressed by the Ventura County District. Near roadway monitors required for the San Francisco-Oakland-Fremont and San Jose-Sunnyvale-Santa Clara CBSAs are being addressed by the Bay Area District, and near roadway monitors required in the Bakersfield, Fresno, Modesto, and Stockton CBSAs are being addressed by the San Joaquin Valley District. All six of these districts are preparing separate network plans and/or separate documents related to the implementation of the NO_2 near roadway requirements. Table 7 lists the districts responsible for planning and implementing near-road NO_2 monitoring in California.

In addition, federal monitoring regulations also require that there must be NO_2 monitoring at a location of expected highest NO_2 concentration representing the neighborhood or larger spatial scales within each CBSA with a population of 1,000,000 or greater. There are six CBSAs that meet the population criteria: Los Angeles-Long Beach-Anaheim, Riverside-San Bernardino-Ontario, San Diego-Carlsbad-San Marcos, San Francisco-Oakland-Fremont, San Jose-Sunnyvale-Santa Clara and Sacramento-Roseville-Arden Arcade. Area-wide NO_2 monitoring in the Los Angeles-Long Beach-Anaheim and Riverside-San

Bernardino-Ontario CBSAs is being addressed by the South Coast District. Area-wide NO_2 monitoring in the San Diego-Carlsbad-San Marcos CBSA is being addressed by the San Diego County District. Area-wide NO_2 monitoring in the San Francisco-Oakland-Fremont and San Jose-Sunnyvale-Santa Clara CBSAs is being addressed by the Bay Area District. Area-wide NO_2 monitoring in the Sacramento-Roseville-Arden Arcade CBSA is being addressed by the Sacramento Metropolitan District. There is no required NO_2 area-wide monitoring for the CBSAs included in this network plan.

Table 7
Near-Road NO_2 Monitoring Requirements in California

CBSA	District Responsible for NO_2 Near-Road Monitoring	Number of Required NO_2 Monitors
Bakersfield	San Joaquin Valley	1
Fresno	San Joaquin Valley	1
Los Angeles-Long Beach-Anaheim	South Coast	2
Modesto	San Joaquin Valley	1
Oxnard-Thousand Oaks-Ventura	Ventura County	1
Riverside-San Bernardino-Ontario	South Coast	2
Sacramento-Arden-Arcade-Roseville	Sacramento Metro	1
San Diego-Carlsbad-San Marcos	San Diego	2
San Francisco-Oakland-Fremont	Bay Area	2
San Jose-Sunnyvale-Santa Clara	Bay Area	1
Stockton	San Joaquin Valley	1

Finally, federal regulations also require that NO_2 monitoring is conducted in 40 locations throughout the United States in selected areas to protect susceptible

and vulnerable populations. The locations of these areas are determined by each U.S. EPA Regional Administrator. In California, seven locations were selected to be part of the nationwide network, which includes San Diego, Oakland, Long Beach, Los Angeles, San Bernardino, Parlier, and Bakersfield. The selected monitoring locations are located in regions covered by the San Diego, Bay Area and San Joaquin Valley District network plans.

Federal CO and SO_2 Monitoring Requirements

Monitoring for carbon monoxide (CO) is only required at a select number of near-road monitoring sites, beginning in the year 2015 (and continuing through 2017) and will be addressed in future network plans by the implementing agencies. Regardless of the future implementation of the near-roadway CO requirements, California has and continues to monitor for CO on a regional basis.

On June 2, 2010, the U.S. EPA published the final rule for the revised federal SO_2 standard which specifies the minimum number of sites at which state and local air agencies must deploy SO_2 monitors. The monitoring regulations require SO_2 monitors be placed in CBSAs based on a population weighted emissions index (PWEI) for the area. The PWEI of a CBSA is calculated by multiplying the latest available SO_2 emission data within each CBSA by the population of the CBSA and then divided by one million. The final rule requires:

- Three SO_2 monitors in CBSAs with PWEI values of one million or more;
- Two SO_2 monitors in CBSAs with PWEI values less than one million but greater than 100,000; and
- One SO_2 monitor in CBSAs with PWEI values greater than 5,000 but less than 100,000.

California has thirty-five CBSAs with population ranging from 17,000 to more than 12 million people. Table 8 lists the CBSAs in California that require SO_2 monitoring. In addition, Table 8 shows that these CBSAs exceed federal monitoring requirements for SO_2. None of the areas included in this report are required to monitor for SO_2.

Table 8
Minimum Monitoring Requirements for SO_2

CBSA	County(ies)	Population (2010)	SO2 emission per CBSA (tpy)	PWEI (Million persons-tpy)	Number of Required Monitors	Number of Active Monitors	Number of Additional Monitors Needed
Los Angeles-Long Beach-Santa Ana	Los Angeles and Orange	12,828,837	13,498	173,785	2	5	0
Riverside-San Bernardino-Ontario	Riverside and San Bernardino	4,224,851	2,478	10,266	1	4	0
San Francisco-Oakland-Fremont	Alameda, Contra Costa, San Francisco, San Mateo, and Marin	4,317,853	12,669	54,702	1	9	0

Federal Lead Monitoring Requirements

On December 14, 2010, U.S. EPA finalized the rule for the revised federal lead (Pb) standard, which also specifies the monitoring requirements for Pb. While the final rule maintains the airport monitoring threshold at 1.0 ton per year (tpy), the rule lowers the industrial source-oriented monitoring threshold from 1.0 tpy to 0.5 tpy. In addition, the final rule replaces the population-based monitoring requirement with a requirement to monitor for Pb at urban NCore sites.

The U.S. EPA selected 15 airports for a one-year study as part of the new Pb rule. Five airports are in California: Palo Alto Airport, McClellan-Palomar Airport, Reid-Hillview Airport, Gillespie Field Airport, and San Carlos Airport. None of these airports fall within the geographical scope of this report. With respect to source-oriented monitoring for Pb, the only stationary sources in California subject to the 0.5 tpy threshold are located in the South Coast Air Basin. The South Coast annual network plan provides a description of their source-oriented lead monitors. The areas covered in this network plan are not required to conduct source-oriented lead monitoring.

Lastly, the final rule requires Pb monitoring at urban NCore sites. Urban NCore sites are those sites in a CBSA of 500,000 or more. Currently, there are six urban NCore sites in California, located in El Cajon, Fresno, Los Angeles, Riverside, Sacramento and San Jose. A seventh rural NCore site is located at White Mountain Research Station. None of these NCore sites are located in areas covered by this network plan. More information on NCore sites is provided in Section 6 of this report.

Federal PM-Coarse ($PM_{10-2.5}$) Monitoring Requirements

The CFR requirement for coarse particulate matter monitoring is in Section 4.8, Appendix D of 40 CFR 58. PM-coarse monitoring is required at NCore sites. At the time this report was drafted, the six urban NCore sites currently monitored for PM-coarse.

Federal $PM_{2.5}$ Chemical Speciation Trends Network (STN) Requirements

The requirements for $PM_{2.5}$ trends speciation monitoring is in Section 4.7.4, Appendix D of 40 CFR 58. Each state is required to conduct chemical speciation monitoring at sites designated to be part of the federal Speciation Trends Network (STN). At the time this report was drafted, and according to AQS, there are seven STN sites in California, which include Fresno-Garland, Bakersfield-California Street, Rubidoux-Mission Blvd., Sacramento-Del Paso Manor, El Cajon, San Jose-Jackson Street and Simi Valley. Each STN site monitored more than 30 chemical speciation measurements. However, not all sites collect the same speciated compounds. None of these STN sites are located in areas covered by this network plan.

Section 6. Federal Monitoring Requirements at State-level or by PQAO or Area

Certain parts of 40 CFR 58 require that state and local agencies operate multi-pollutant monitoring sites, meet PM collocation requirements, as well as monitor at sites that are considered background, transport, or highest (maximum) concentration sites. The rest of this Section discusses these requirements.

Federal NCore Monitoring Requirements for California

On October 17, 2006, U.S. EPA issued amendments to the ambient air monitoring requirements for criteria pollutants. These amendments are codified in 40 CFR Parts 53 and 58. One of the most significant changes in the regulations was the requirement to establish a network of National Core (NCore) multi-pollutant monitoring stations. NCore sites include neighborhood and urban scale measurements in metropolitan areas and rural areas. Sites are long term and sited away from direct emission sources that could impact the ability to detect area-wide concentrations. These stations provide data on several pollutants at lower detection limits and replace the National Air Monitoring Station (NAMS) network that had existed for many years.

Currently, in California, there are a total of seven monitoring sites that are part of the national NCore network. The seven NCore sites are listed in Table 9 along with the agency that operates the site. Note that in February 2014, the San Diego Air Pollution Control District temporary relocated the El Cajon site to a new location approximately 3.8 kilometers from its current location. This move is expected to last between 12-18 months due to construction on the school ground near the monitoring station. More information regarding the temporary relocation can be found in the 2014 San Diego network plan.

Table 9
NCore Monitoring in California

NCore Site Name	NCore Type	Agency Responsible for NCore Monitoring
El Cajon	Urban	San Diego
Fresno-Garland	Urban	ARB
Los Angeles-North Main	Urban	South Coast
Riverside-Rubidoux	Urban	South Coast
Sacramento-Del Paso Manor	Urban	Sacramento Metro
San Jose	Urban	Bay Area
White Mountain Research Station	Rural	Great Basin Unified

6.1 Federal Collocation Requirements for the ARB PQAO

Appendix A of 40 CFR 58 includes requirements for collocation of samplers as part of quality checks for the $PM_{2.5}$, continuous $PM_{2.5}$, PM_{10}, and lead (Pb) monitoring networks. The CFR contains separate collocation requirements for these monitors. The requirements are to be met for each primary quality assurance organization (PQAO). Four PQAOs exist in California, one each for the San Francisco Bay Area AQMD, San Diego County APCD, and South Coast AQMD, and one for the remainder of the State that is called the ARB PQAO.

$PM_{2.5}$ Collocation Status

For $PM_{2.5}$, the CFR requires that for each type of *manual* $PM_{2.5}$ monitor, 15 percent of the sites within a PQAO have a collocated monitor of the same type. Two types of manual $PM_{2.5}$ FRMs exist currently in the ARB PQAO. Collocation requirements apply to each method type. The types of manual $PM_{2.5}$ samplers are the R&P Non-sequential (117) and R&P Sequential (118). At the time this report was drafted, one collocation site is required for method 117 and three collocation sites are required for method 118.

For method 117, the collocation site is Victorville. This site is operated by the Mojave Desert Air Quality Management District (MDAQMD). By the end of 2014, MDAQMD is proposing to switch out one of the manual FRM monitors at the Victorville site to a continuous $PM_{2.5}$ FEM monitor. Once this proposal becomes fully implemented, the ARB PQAO will have to find a replacement site to collocate for this method type. ARB will reassess the collocation situation for this method type and coordinate with districts within the ARB PQAO to ensure that this collocation requirement continues to be met.

For method 118, the collocation sites are: Bakersfield-California, Fresno-Garland, Sacramento-Del Paso Manor and Truckee. When this report was drafted, there was only one proposed change to these four collocation sites. The Northern Sierra Air Quality Management District (NSAQMD) proposed to relocate the collocated $PM_{2.5}$ monitor from the Truckee site to the Portola site. The NSAQMD is currently requesting U.S. EPA approval for the relocation. Additional information regarding these proposals will be provided in the 2015 ARB network plan.

In the ARB PQAO, Calexico-Ethel is the only site that operates two $PM_{2.5}$ monitors that are of different method type. At this site, one monitor is a manual FRM (R&P-method 118) and the other monitor is a manual FEM (Thermo Scientific-method 145). The FRM (method 118) is the primary monitor and the FEM (method 145) is the collocated monitor. Due to the different method type of the $PM_{2.5}$ monitors, ARB is waiting for further clarification from U.S. EPA on whether this type of monitoring setup could be used as an additional collocation monitoring site. Table 10 summarizes the manual $PM_{2.5}$ collocation requirements in the ARB PQAO as well as the collocation sites by method type.

Table 10
Collocation Requirements for Manual $PM_{2.5}$ Monitors

Method Code	Number of Primary Monitors	Number of Required Collocated Monitors	Number of Active Collocated Monitors
117	8	1	1
118*	22	3	4 (or 5)

Notes:
Method 117 FRM (R&P non-seq.): Victorville
Method 118 FRM (R&P seq.): Bakersfield, Fresno, Sacramento and Truckee

*The Calexico-Ethel site has two filter $PM_{2.5}$ monitors of which have different methods. The primary $PM_{2.5}$ monitor at this site is an R&P sequential monitor (method 118) and the quality assurance monitor is a Thermo (method 145). Regardless of whether this monitoring setup could be used for collocation purposes, the ARB PQAO met collocation requirements for method 118.

The CFR also requires that for each *continuous* $PM_{2.5}$ federal equivalent method (FEM), 15 percent of the sites must be collocated, but that the first collocation monitor is an FRM, the second an FEM, and so on alternating FRM with FEM as additional collocation monitors are required. At the time this report was drafted, 34 sites in the ARB PQAO operate continuous $PM_{2.5}$ FEM monitors representing three method types. The three methods are the Met-One BAM (170), Thermo Scientific TEOM (181) and Grimm (195) with 32 sites in the ARB PQAO operating method 170, and one site each operating method 181 and 195.

For method 170, the 32 sites in the ARB PQAO require that five sites are collocated of which the first, third, and fifth collocations are between an FEM/FRM and the second and fourth collocations are between an FEM/FEM. At the time this report was drafted, there are two FEM/FRM sites in the ARB PQAO: Modesto and Salinas. To meet this FEM/FRM requirement, one additional FEM/FRM collocation site is needed in the ARB PQAO. ARB is proposing to add a $PM_{2.5}$ FRM monitor to the Madera site to collocate with the existing continuous $PM_{2.5}$ FEM monitor. Once this proposed plan becomes implemented at the Madera site, the ARB PQAO would meet the FEM/FRM collocation requirement. In regards to the FEM/FEM collocation requirement, there are currently two FEM/FEM sites in the ARB PQAO: Stockton-Hazelton and Simi Valley. The Stockton-Hazelton site was the existing FEM/FEM site and the Simi Valley site recently became an FEM/FEM site in March of 2014. The ARB PQAO will not require an additional FEM/FEM site in the PQAO until the continuous $PM_{2.5}$ network which utilizes method 170 reaches 37 sites.

For method 181, the one site utilizing this method in the ARB PQAO is the Keeler site located in Inyo County. The Great Basin Unified District discontinued one of

the two $PM_{2.5}$ FRM monitors at the Keeler in July 2013 and re-designated the continuous $PM_{2.5}$ FEM monitor as the primary monitor at this site. The Keeler site currently meets collocation requirements.

For method 195, the one site utilizing this method in the ARB PQAO is the Humboldt Hill site located in the City of Eureka. The North Coast Unified District discontinued the $PM_{2.5}$ FRM at the Eureka-I Street site and added it to the Humboldt Hill site, collocating with the FEM Grimm monitor (195). The Humboldt Hill site currently meets collocation requirements. However, the District is planning to designate the $PM_{2.5}$ FRM monitor at Humboldt Hill as the primary monitor and re-designate the Grimm monitor as the quality assurance monitor at this site. In addition, the District is planning on asking U.S. EPA approval via a waiver to exclude the Grimm data at this site from NAAQS comparison. ARB is waiting for the District's plan in writing and U.S. EPA's responses to the plan. More detailed information regarding this proposed network change will be provided in the 2015 ARB network plan. Table 11 summarizes the collocation requirements for continuous $PM_{2.5}$ FEM in the ARB PQAO.

Table 11
Collocation Requirements for continuous $PM_{2.5}$ FEM

Method Code	Number of Primary Monitors	Number of Required Collocated Monitors	Number of Active Collocated FRM Monitors	Number of Active Collocated FEM Monitors (same method designation as primary)
170*	32	5	2 (need 1)	2
181	1	1	1	0
195	1	1	1	0

Notes:
FEM/FRM sites: Humboldt Hill, Modesto, Keeler and Salinas
FEM/FEM site: Stockton and Simi Valley

*The ARB proposed to add a $PM_{2.5}$ FRM monitor to the Madera site. Once this proposal becomes implemented, the ARB PQAO meets collocation requirements for continuous $PM_{2.5}$ FEM.

The CFR also requires that 80 percent of the collocated $PM_{2.5}$ monitors are sited at monitoring stations that are within +/- 20 percent of the federal $PM_{2.5}$ standards. California is a very large state in which environmental conditions (e.g., temperature, precipitation, humidity, wind speeds, and elevation) vary widely and the composition of the $PM_{2.5}$ varies significantly. Also, a large number of operating agencies operate sites in the statewide $PM_{2.5}$ network. ARB and local air districts designed the locations of collocated $PM_{2.5}$ samplers to strike a balance in adequately representing all of these factors. In this way, the quality control function of the collocated monitoring is best realized. While Appendix A of

40 CFR 58 requires 80 percent of the collocated monitors to be within ± 20 percent of the applicable federal air quality standard, focusing on achieving this was deemed to result in too much clustering of the collocated monitors in too few of the factors needing representation. To support this determination, the U.S. EPA requested that the network plan includes design values of the collocation sites. Table 12 lists the design values of the $PM_{2.5}$ FRM and FEM monitors at each of the collocation sites in the ARB PQAO. Note that exceptional events are included in the determination of the design values for these PM sites.

Table 12
Design Values for $PM_{2.5}$ Collocation Sites (ug/m^3)

Collocation Site Name	2013 Annual Design Value	2013 24-hr Design Value
Bakersfield (FRM/FRM)	16.4	65
Calexico (FRM/FRM)	13.8	30
Fresno (FRM/FRM)*	15.5	62
Sacramento (FRM/FRM)	10.4	36
Truckee (FRM/FRM)	7	21
Victorville (FRM/FRM)	6.8	13

Collocation Site Name	2013 Annual Design Value	2013 24-hr Design Value
Humboldt Hill (FEM/FRM)**	--	--
Keeler (FEM/FRM)	7.6	38
Modesto (FEM/FRM)	13.6	51
Salinas (FEM/FRM)	6.3	14
Simi Valley (FEM/FEM)	9.1	20
Stockton (FEM/FEM)	13.9	45

Notes:
*The 2013 design values for the Fresno site were computed with data from the Fresno-1st Street site and Fresno-Garland site.

**There were insufficient data to compute valid 2013 design values for the Humboldt Hill site.

PM_{10} Collocation Status

The CFR also requires that 15 percent of PM_{10} sites with manual monitoring have collocated samplers. For this assessment, per U.S. EPA's guidance, the ARB combines all of the PM_{10} FRM monitors regardless of its method type to get the total number of required collocation sites in the ARB PQAO. Currently, there are 49 PM_{10} FRM sites in the ARB PQAO of which four sites are already collocated. The collocation sites are: Bakersfield-California, Fresno-Drummond, Sacramento-Del Paso Manor and Keeler.

To meet the PM_{10} collocation requirement, the ARB PQAO needs three additional PM_{10} collocation sites because the Simi Valley site is no longer collocated for

PM_{10} FRM. The Simi Valley site currently has only a continuous PM_{10} FEM monitor. ARB is currently evaluating site locations in the ARB PQAO to add three additional PM_{10} collocation sites. More information regarding the selection of additional PM_{10} collocation sites will be provided in the 2015 ARB network plan.

Lead Collocation Status

On December 14, 2010, U.S. EPA finalized the rule for the revised federal lead (Pb) standard, which also specifies the collocation requirements for Pb. The regulations specify that PQAOs that have a combination of source and non-source Pb sites have 15 percent of their Pb monitoring sites collocated. The regulations also require that the Pb network be treated independently from the PM network, and that the first collocation site be at the highest Pb concentration site within the network. Moreover, the regulations specify that if a PQAO has no source or non-source Pb monitoring, and the only Pb monitoring is conducted at NCore sites, then the collocated Pb monitor must be of the same method designation as the primary Pb monitor.

The ARB PQAO requires no source or non-source Pb monitoring. However, the ARB PQAO does have two NCore sites located at Fresno-Garland and Sacramento-Del Paso Manor and one SLAMS site located at Calexico-Ethel that monitors for Pb. Pb collocation at the NCore sites is being handled at the national level so ARB is not required to collocate for Pb at either the Fresno or Sacramento sites. However, ARB is required to collocate for Pb at the Calexico-Ethel site. Since Pb monitoring at Calexico-Ethel is not required, ARB could discontinue Pb monitoring at this site if ARB chooses too. However, if ARB decides to continue Pb monitoring at Calexico-Ethel, then ARB will need to collocate. ARB is currently evaluating options and will ensure that collocation for Pb is met for the PQAO by the 2015 network plan.

Distance between Collocated PM Monitors

The CFR requires that information regarding the distance between collocated PM monitors be included in the network plan. Table 13 lists the distance between the collocated monitors at each of the PM collocation sites in the ARB PQAO. Note that most of the PM collocation sites listed in Table 13 are not covered in the geographical scope of this network plan. However, because collocation is a PQAO requirement, ARB is including this information in this plan.

Table 13
Distance between Collocated PM Monitors

PM2.5 FRM/FRM

Collocation Site Name	Distance (in meters)
Bakersfield	2.3
Calexico	2.0
Fresno	2.0
Sacramento	1.8
Truckee	4.6
Victorville	1.7

PM2.5 FEM/FRM

Collocation Site Name	Distance (in meters)
Humboldt Hill	2.0
Keeler	1.4
Modesto	2.8
Salinas	2.9

PM2.5 FEM/FEM

Collocation Site Name	Distance (in meters)
Simi Valley	2.1
Stockton	1.1

PM10 FRM/FRM

Collocation Site Name	Distance (in meters)
Bakersfield	2.3
Fresno	4.9
Keeler	1.7
Sacramento	2.8

Federal Background, Transport, Max Concentration and Area-wide $PM_{2.5}$ Monitoring Requirements

Federal monitoring also required that the network plan list sites in California that represent background, transport, maximum concentration or area-wide monitoring for $PM_{2.5}$. From a statewide perspective, background sites are intended to quantify regionally representative $PM_{2.5}$ concentrations for sites located away from populated areas and other significant emission sources. The following sites serve as regional background sites in California:

Northern California background site - Point Reyes National Seashore (AQS # 060410002)

Southern California background site – San Rafael Wilderness (AQS # 060839000)

These background $PM_{2.5}$ sites are a part of the Interagency Monitoring of Protected Visual Environments (IMPROVE) program, which is governed by a steering committee composed of representatives from federal and regional-state agencies. $PM_{2.5}$ mass data (i.e., 88502) are currently being reported from these two sites into AQS. Note that ARB also operates a $PM_{2.5}$ site at Point Reyes (060410003) but this site is not the same site as the Point Reyes National Seashore site (060410002) operated by the National Park Service. ARB's Point Reyes site was discontinued in December 2013. More information on the IMPROVE program can be found at:
http://vista.cira.colostate.edu/improve/Overview/Overview.htm

For transport monitoring, ARB has identified two $PM_{2.5}$ monitoring sites within the geographical area of this report as transport sites. They are the Vallejo and Roseville sites, which capture pollutant transport from the Bay Area to the Sacramento region and pollutant transport from Sacramento to the outlying areas of Sacramento, respectively. Among the remaining sites included in this report, ARB has identified a total of 19 area-wide $PM_{2.5}$ monitoring sites. These sites are identified as area-wide based on their siting scale designation as either neighborhood, urban, or regional per Subpart A of 40 CFR, Part 58, Section 58.1. A subset of seven of the area-wide monitoring sites has been identified as representing the maximum concentration site in each respective MSA. The area-wide and maximum concentration $PM_{2.5}$ sites are listed below. Note that not all $PM_{2.5}$ sites are designated as background, transport, maximum concentration or area-wide. There are other purposes for $PM_{2.5}$ monitoring; for example, monitoring for quality assurance purposes.

Area-wide $PM_{2.5}$ Sites:

Auburn	Chico	Colusa
Grass Valley	Lakeport	Lancaster
Mojave	Portola	Quincy
Red Bluff	Redding	Ridgecrest
Roseville	San Andreas	Ukiah
Willits	Woodland	Yreka
Yuba City		

Maximum Concentration PM2.5 Sites:

Chico	Lakeport	Lancaster
Red Bluff	Redding	Willits
Yuba City		

Section 7. Federal Air Quality Assurance

The information below, along with the information available via the web link (http://www.arb.ca.gov/aaqm/qa/qa.htm), provides an overview of ARB's Quality Management Branch (QMB) compliance status with the requirements of 40 CFR Part 58, Appendices A, C, and E. The compliance status overview is part of the annual network plan requirement.

Background

The Quality Assurance Section (QAS) and Quality Management Section (QMS) fulfill the QMB mission to ensure ambient air quality data meet or exceed the quality and program objectives of the end users. QAS and QMS perform various quality assurance activities to verify that data collected comply with procedures and regulations set forth by U.S. EPA and can be considered good quality data and data-for-record.

The quality assurance activities are achieved through various audits which are independent from the ambient air monitoring program responsibilities. California's large network and unique ambient air monitoring challenges require a comprehensive state of the art audit program. ARB's audit program meets the federal requirements for conducting annual performance evaluations and has been designated as equivalent to the National Performance Audit Program. Audits are conducted by using independent National Institute of Standards and Technology (NIST) traceable standards and must adhere to federally established acceptance criteria.

QAS is responsible for conducting performance audits of criteria and non-criteria pollutant analyzers, particulate samplers, meteorological equipment, and laboratory analyses utilized for generating ambient level measurements. QAS also performs site reviews as well as reports quality assessment and quality control results. QMS is responsible for ensuring that ARB meets its federally mandated PQAO responsibilities. QMS performs system audits and provides quality assurance oversight of the PQAO districts.

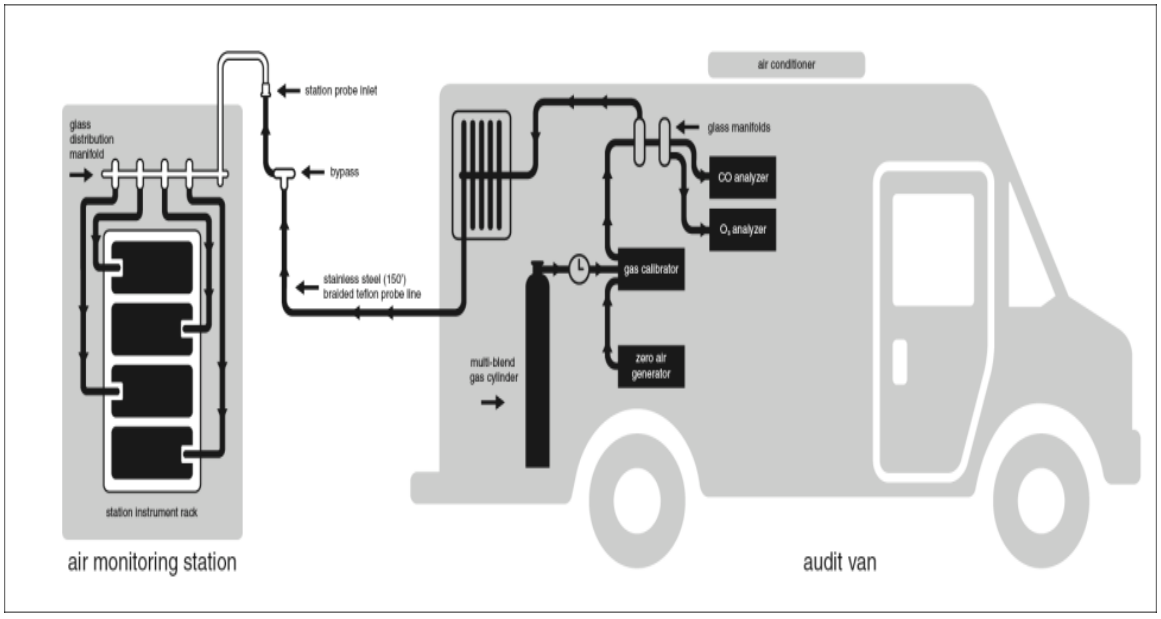
During an audit, if a parameter fails to meet critical criteria (QA Handbook Volume II, Appendix D), an Air Quality Data Action (AQDA) request is issued to the facility operator. All AQDA's must be investigated by the operator and resolved to bring the parameter in question into compliance. The station operator completes the AQDA by documenting the resolution, specifying the time period during which data was potentially affected, and recommending whether the data is to be released, corrected, or invalidated. QMB reviews the completed AQDA and discusses any concerns with the operator. A finalized copy of the AQDA is forwarded to the operator and ARB's Air Quality Analysis Section. Other issues identified as systematic or operational criteria that may impact or potentially impact data quality is documented through the issuance of a Corrective Action Notification (CAN).

ARB Quality Assurance Activities

Monitoring Station Audits

Annually, QAS conducts through-the-probe (TTP) audits for all continuous gaseous analyzers in the network. TTP audits of the gaseous analyzers, monitoring for carbon monoxide, nitrogen dioxide, hydrogen sulfide, sulfur dioxide, and ozone are conducted in accordance with U.S. EPA requirements (Title 40, CFR, Part 58, Appendix A). These audits verify the accuracy of the gaseous analyzers and ensure the integrity of the entire sampling system. For most TTP audits, an audit van is transported by QAS to the ambient air monitoring station. Audit vans house the necessary instrumentation and equipment to allow the audit to be conducted at the same condition as the station instruments. TTP audits, depicted in Figure 2, are conducted by introducing NIST traceable gases from the van into the station sampling probe inlet at various concentrations. QAS compares the results obtained from the station analyzer to the known values generated in the van.

Figure 3
Through-the-Probe Audit



TTP audit methodology can identify deficiencies caused by poor analyzer response, pollutant scavenging contaminants, and sampling system leaks. Deficiencies like these can cause the gaseous analyzers to fail an audit and possibly affect the quality of the ambient air data.

Biannually, QAS determines the accuracy of each particulate sampler in the network by comparison of the instrument's flow rate to either a certified orifice or

a mass flow meter. These devices are certified against a NIST traceable flow device or calibrator. The audit device is connected in-line with the sampler's flow path and the flow rate is measured while the sampler is operating under normal sampling conditions. The true flow is calculated from the audit device's calibration curve. The sampler's flow is then compared to the true flow, and a percent difference is determined for verifying compliance.

QAS also conducts annual sensor audits of meteorological parameters, using NIST traceable equipment. Accurate meteorological data are important for characterizing meteorological processes such as transport and diffusion, and to make air quality forecasts and burn-day decisions.

An integral part of a performance audit is conducting a siting evaluation. Stations that meet siting criteria at the time of initial setup may no longer conform due to updated regulations, or changes in surrounding conditions and land use. Physical measurements and observations are noted on the site survey or accompanying documentation to determine compliance with 40 CFR Part 58, Appendix E requirements. Many of the siting issues result from the growth of vegetation/trees infringing on the minimum distance required from probes/inlets.

Laboratory Performance and System Audits

Additionally, laboratory mass analysis performance audits are conducted annually by QAS. These audits utilize NIST certified weights, hygrometers, and temperature sensors to verify the accuracy of the laboratory balance, relative humidity, and temperature sensors.

QMB conducts system audits to determine whether a district’s air monitoring program satisfies the requirements of 40 CFR Part 58 and U.S. EPA's Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II. Compliance with these regulations is necessary if the data are to be considered data-for-record per the California Code of Regulations (Title 17, Article 3, Section 70301). Data meeting these requirements are eligible to be used in actions taken pursuant to the federal and California Clean Air Acts.

Quality Assessment and Quality Control

QAS also ensures the quality of the data collected by the air monitoring stations operating in California through analysis of precision data submitted to U.S. EPA’s AQS database. Precision checks for gaseous/continuous samplers are required once every two weeks. These precision checks are conducted nightly at ARB and some district operated sites, and weekly or bi-weekly at other district sites. Precision checks for non-continuous, collocated particulate samplers are to be performed at least every twelfth day. QAS staff analyzes the precision data in accordance with 40 CFR 58, Appendix A.

Air monitoring staff performs a one-point flow rate verification check at least once every month on the filter-based and automated PM analyzers. Air monitoring staff reviews these data and takes corrective action when the results exceed U.S. EPA's requirements. These flow rate verifications are used to assess bias of the automated instruments in accordance with 40 CFR Part 58, Appendix A, 3.2.3. These bias estimates are further verified by the semi-annual flow rate audits that are conducted five to seven months apart in each calendar year. In the course of auditing the $PM_{2.5}$ FRM and continuous samplers, the date of the last six months of flow rate and leak checks performed by the air monitoring staff are recorded.

Audit Report Summary

Information about each air monitoring station audited by QMB is available at: http://www.arb.ca.gov/qaweb/sitelist_create.php. This web page provides the map location, latitude and longitude coordinates, site photos, the pollutants monitored, along with a detailed site survey of the instrumentation and physical parameters for each site.

The 2013 calendar year audit dates for both the gaseous analyzers and PM monitors operating at the monitoring sites covered in this report are provided in Table 14. The residence time for each gas analyzer is included in Table 15. Audit results are directly submitted to AQS quarterly per Appendix A of 40 CFR Part 58. In addition, as required by 40 CFR Part 58.15, ARB submits a data certification letter along with the required AQS reports (AMP450NC and AMP600) to U.S.EPA, annually. The last certification letter was sent to the U.S. EPA on May 16, 2014. In 2015, ARB intends to certify the data on or before the May 1 deadline.

Table 14
2013 Audit Date Information for the Monitors in this Plan

Site Name	Gaseous Audit	First Flow Audit	Second Flow Audit
Middletown-Anderson Springs	08/28/2013	02/28/2013	08/28/2013
Anderson-North Street	04/10/2013	04/10/2013	10/01/2013
Auburn – Atwood Road	08/13/2013	02/07/2013	08/13/2013
Auburn – Dewitt C Avenue	-	02/07/2013	08/13/2013
Barstow	02/13/2013	02/13/2013	08/07/2013
Blythe-Murphy Street	02/12/2013	-	-
Canebrake	-	02/07/2013	08/27/2013
Chester	-	03/13/2013	09/03/2013
Chico – East Avenue	07/09/2013	01/29/2013	07/09/2013
Cloverdale	-	06/07/2013	12/10/2013
Colfax-City Hall	08/12/2013	02/07/2013	08/12/2013
Colusa-Sunrise Blvd	06/14/2013	06/14/2013	11/26/2013

Site Name	Gaseous Audit	First Flow Audit	Second Flow Audit
Cool (seasonal)	08/12/2013	-	-
Davis-UCD Campus	07/30/2013	02/14/2013	07/30/2013
Echo Summit (seasonal)	06/13/2013	-	-
Fort Bragg – 300 Dana Street	-	06/06/2013	12/09/2013
Glenbrook	08/28/2013	02/28/2013	08/28/2013
Grass Valley-Litton Building	03/19/2013	03/19/2013	09/27/2013
Gridley	-	05/22/2013	11/26/2013
Guerneville-Church and 1st	-	06/05/2013	12/10/2013
Healdsburg - Matheson	-	06/05/2013	12/10/2013
Healdsburg-Municipal Airport	06/05/2013	-	-
Hesperia-Olive Street	02/26/2013	02/26/2013	08/06/2013
Jackson-Clinton Road	05/29/2013	-	-
Jerseydale	11/01/2013	-	-
Joshua Tree National Monument	08/06/2013	-	-
Joshua Tree – Pinto Wells	08/06/2013	-	-
Joshua Tree - Cottonwood	08/07/2013	-	-
Lakeport – Lakeport Blvd	08/29/2013	02/28/2013	08/29/2013
Lancaster – Division Street	02/21/2013	02/21/2013	08/06/2013
Lassen Volcanic National Park	04/09/2013	-	-
Lucerne Valley - Middle School	-	02/27/2013	08/07/2013
Mojave	02/05/2013	02/05/2013	08/28/2013
Paradise – Airport	07/10/2013	-	-
Phelan – Beekley Road & Phelan	02/20/2013	-	-
Placerville – Gold Nugget Way	06/12/2013	-	-
Portola – Nevada Street	-	not yet operational	09/03/2013
Quincy – N Church Street	-	03/13/2013	09/03/2013
Red Bluff – Main Street	-	01/30/2013	07/08/2013
Red Bluff – Messer Drive	-	01/30/2013	07/08/2013
Red Bluff – Oak Street	07/08/2013	-	-
Redding – Health Department	04/09/2013	04/09/2013	10/01/2013
Ridgecrest – California Ave	-	02/05/2013	08/28/2013
Roseville – N Sunrise Blvd	07/29/2013	02/11/2013	07/29/2013
San Andreas – Gold Strike Road	05/30/2013	05/30/2013	11/25/2013
Shasta Lake – Lake Blvd	04/08/2013	-	-
Shasta Lake – La Mesa	-	04/08/2013	10/01/2013
Sonora – Barretta Street	05/29/2013	-	-
South Lake Tahoe – Sandy Way	-	06/13/2013	12/02/2013
Sutter Buttes (seasonal)	05/13/2013	-	-
Trona – Athol/Telescope #2	10/16/2013	04/23/2013	10/16/2013
Truckee - Fire Station	-	03/12/2013	09/03/2013
Tuscan Butte (seasonal)	05/15/2013	-	-

Site Name	Gaseous Audit	First Flow Audit	Second Flow Audit
Ukiah – Gobbi Street	06/06/2013	-	-
Ukiah – Library	-	06/06/2013	12/09/2013
Vacaville – Merchant Street	-	02/04/2013	07/18/2013
Vacaville – Ulatis Drive	07/18/2013	-	-
Victorville – Park Avenue	02/28/2013	02/28/2013	08/06/2013
West Sacramento – 15th Street	-	02/04/2013	07/17/2013
White Cloud (seasonal)	09/04/2013	-	-
Willits – Justice Center	-	06/06/2013	12/09/2013
Willows – Colusa	07/16/2013	02/05/2013	07/16/2013
Woodland – Gibson Road	07/17/2013	02/05/2013	07/17/2013
Yosemite Natl Park – Turtleback	11/18/2013	-	-
Yosemite Village – Visitor Center	-	04/08/2013	11/18/2013*
Yreka	10/02/2013	04/10/2013	10/02/2013
Yuba City	07/11/2013	01/29/2013	07/11/2013

Note:
*Due to Rim Fire the semi-annual flow audit at Yosemite Village could not be scheduled and audited within the 5 to 7 month interval requirement.

Table 15
2013 Gaseous Inlet Probe Residence Time

Site Name	Gaseous Residence Time (seconds)				
	Ozone	Nitrogen Dioxide	Carbon Monoxide	Sulfur Dioxide	Hydrogen Sulfide
Middletown-Anderson Springs	-	-	-	-	3.7
Anderson-North Street	6.9	-	-	-	-
Auburn – Atwood Road	17.1	-	-	-	-
Barstow	-	12.4	-	-	-
Blythe-Murphy Street	17.7	-	-	-	-
Chico – East Avenue	12.1	14.2	-	-	-
Colfax-City Hall	14.2	-	-	-	-
Colusa-Sunrise Blvd	6.9	-	-	-	-
Cool (seasonal)	11.0	-	-	-	-
Davis-UCD Campus	16.7	16.8	-	-	-
Echo Summit (seasonal)	12.1	-	-	-	-
Glenbrook	-	-	-	-	5.3
Grass Valley-Litton Building	7.2	-	-	-	-
Healdsburg-Municipal Airport	14.2	-	-	-	-
Hesperia-Olive Street	5.0	-	-	-	-
Jackson-Clinton Road	5.0	-	-	-	-
Jerseydale	15.8	-	-	-	-

Site Name	Gaseous Residence Time (seconds)				
	Ozone	Nitrogen Dioxide	Carbon Monoxide	Sulfur Dioxide	Hydrogen Sulfide
Joshua Tree National Monument	4.0	-	-	-	-
Joshua Tree – Pinto Wells	4.3	-	-	-	-
Joshua Tree - Cottonwood	7.1	-	-	-	-
Lakeport – Lakeport Blvd	13.5	-	-	-	-
Lancaster – Division Street	14.0	15.7	14.0	-	-
Lassen Volcanic National Park	9.3	-	-	-	-
Mojave	8.3	-	-	-	-
Paradise – Airport	11.7	-	-	-	-
Phelan – Beekley Road & Phelan	6.4	-	-	-	-
Placerville – Gold Nugget Way	6.3	-	-	-	-
Red Bluff – Oak Street	12.7	-	-	-	-
Redding – Health Department	7.6	-	-	-	-
Roseville – N Sunrise Blvd	18.4	18.7	-	-	-
San Andreas – Gold Strike Road	8.9	-	-	-	-
Shasta Lake – Lake Blvd	18.0	-	-	-	-
Sonora – Barretta Street	9.1	-	-	-	-
Sutter Buttes (seasonal)	9.2	-	-	-	-
Trona – Athol/Telescope #2	7.9	10.0	-	8.3	8.7
Tuscan Butte (seasonal)	6.9	-	-	-	-
Ukiah – Gobbi Street	16.6	-	-	-	-
Vacaville – Ulatis Drive	4.3	-	-	-	-
Victorville – Park Avenue	15.3	13.4	11.9	12.3	-
White Cloud (seasonal)	15.9	-	-	-	-
Willows – Colusa	5.8	-	-	-	-
Woodland – Gibson Road	6.5	-	-	-	-
Yosemite Natl Park – Turtleback	9.9	-	-	-	-
Yreka	4.8	-	-	-	-
Yuba City	7.5	8.4	-	-	-

Section 8. Operating schedules

The CFR requires that the annual network plan include information about operating schedules. While gaseous monitors (e.g., O_3, CO, NO_2, SO_2) and particulate monitoring with FEMs usually operate continuously throughout the year, particulate monitoring with FRMs often operate one day out of every three days or one day out of every six days. The primary reason why particulate FRMs operate less frequently is that the particulate FRMs are filter-based and therefore much more labor intensive, requiring that field staff frequently retrieve and replace filters and that laboratory staff pre- and post-weigh filters. The continuous gaseous and particulate monitors produce hourly measurements of the gaseous and particulate pollutants, while the particulate filter-based monitors produce 24-hour measurements of particulate pollutants.

Particulate matter operating schedules

Current operating schedules for $PM_{2.5}$ FRM monitors in the areas included in this report are listed in Table 16. These schedules were obtained from the U.S. EPA's AQS database. In March 2014, the U.S. EPA provided to ARB an annual network plan checklist which includes a finding that requests ARB add the most recent design values for the $PM_{2.5}$ FRM monitors that are covered in this report which are operating on a 1-in-6 day schedule. Design values of the $PM_{2.5}$ monitoring sites included in this plan are also included in Table 16. Note that exceptional events are included in the determination of the design values. In addition, on August 5, 2013, ARB formally requested approval from the U.S. EPA for the reduction of the sampling frequency for the $PM_{2.5}$ FRM monitors covered in this report. The letter requesting U.S. EPA approval is attached in Appendix C. At the time this report was drafted, ARB has not received a formal response from the U.S. EPA regarding the approval request.

While there are a number of continuous $PM_{2.5}$ monitors deployed, most of these are not federal equivalent methods (FEM). In March of 2008, U.S. EPA approved the first continuous $PM_{2.5}$ FEM. Then on June 2009 and March 2011, U.S. EPA approved two more continuous $PM_{2.5}$ FEMs. At the time this report was drafted, in the ARB PQAO, there are 34 continuous $PM_{2.5}$ FEM sites.

Operating schedules for the manual PM_{10} samplers in the areas included in this report all operate on a 1-in-6 day schedule. Similar to the $PM_{2.5}$ FRM monitors, the 1-in-6 day schedule of the PM_{10} FRM monitors must also meet certain monitoring criteria. To determine whether the PM_{10} FRM monitors covered in the scope of this plan also meet the 1-in-6 day schedule, EPA requested the maximum concentrations of the PM_{10} FRM sites. Table 17 lists the PM_{10} FRM sites covered in this plan along with the 2013 PM_{10} maximum concentrations. Note that exceptional events are included in the determination of the maximum concentrations.

There are also nine continuous PM_{10} monitors operating in the area that this report covers, which are reporting data into AQS. These monitors are located at the South Lake Tahoe, Fort Bragg, Mojave, Lancaster, Trona, Willows, Barstow, Hesperia and Victorville sites. These continuous PM_{10} monitors are FEMs and are either BAM or TEOM monitors.

Table 16
Current $PM_{2.5}$ FRM Operating Schedules and Design Values
(Monitors of the air districts included in this report)

Site Name	AQS Site Number	Current Schedules	2013 Design Values 24hr / Ann. Avg. (ug/m^3)
Chico-East	060070008	Everyday	34 / 10.1
Colusa-Sunrise Blvd	060111002	1 in 6 day	24 / 7.1
Grass Valley-Litton Building	060570005	1 in 6 day	15 / 4.6
Lakeport-Lakeport Blvd	060333001	1 in 6 day	10 / 3.7
Lancaster-43301 Division St	060379033	1 in 6 day	25 / 6.1
Portola-222 1st Avenue	060631007	1 in 3 day	37 / 12.8
Quincy-N Church Street	060631006	1 in 3 day	36 / 10.2
Redding-Health Department Roof	060890004	1 in 6 day	17 / 5.7
Ridgecrest-100 West California	060290015	1 in 6 day	11 / 5.4
Roseville-N Sunrise Blvd	060610006	1 in 6 day	19 / 7.5
Truckee-Fire Station	060571001	1 in 3 day	21 / 7
Victorville-14036 Park Ave	060710306	1 in 6 day	13 / 6.8
Woodland-Gibson Road	061131003	1 in 6 day	21 / 7.2
Yreka-Foothill Drive	060932001	1 in 6 day	26 / 6.3
Yuba City-Almond Street	061010003	Everyday	29 / 7.7

Table 17
Maximum Concentrations of the PM_{10} FRM Sites Covered in this Plan

Site Name	AQS Site Number	2013 24-hr max conc. (ug/m^3)
Anderson	060890007	40.5
Auburn	060610002	79.5
Canebrake	060290017	43.3
Chico	060070008	59.0
Cloverdale	060970001	24.0
Colfax	060610004	57.5
Colusa	060111002	73.4
Guerneville	060973002	37.0
Healdsburg	060970002	54.0
Lucerne Valley	060710013	13.0
Red Bluff	061030002	54.5
Redding	060890004	29.5
Roseville	060610006	55.5
San Andreas	060090001	55.6
Shasta Lake	060890008	45.5
Vacaville	060953001	35.4
West Sacramento	061132001	62.4
Woodland	061131003	60.3
Yosemite Village	060431001	102.1
Yreka	060932001	54.6
Yuba City	061010003	56.1

Notes:
The PM_{10} FRM monitors at Glenbrook (060333011), Lakeport (060333001), and Middletown (060333010) were not included in this table because these monitors report PM_{10} data in local conditions (i.e., 85101) and not in standard conditions (i.e., 81102). PM_{10} data is required to be reported in standard conditions for NAAQS comparison.

Ozone operating schedules

While most ozone monitors operate continuously all year, a small number of ozone sites in the areas included in this report operate only in the warmer six months of the year. Several of these sites are at higher elevation where access during the winter can be problematic. Also, for most of the State, ozone is a summertime problem and concentrations during the winter are well below the levels of the ambient air quality standards. The following seasonal ozone sites in the areas included in this report all operate from May through October:

Cool	(El Dorado County)
Echo Summit	(El Dorado County)
Jerseydale	(Mariposa County)
Sutter Buttes	(Sutter County)
Tuscan Butte	(Tehama County)
White Cloud	(Nevada County)

In March 2013, EPA provided to ARB an annual network plan checklist which includes a finding that requires ARB to justify the monitoring schedule of the seasonal ozone sites that are covered in this report. Federal regulations require that ozone monitors operate every day, from January through December, unless certain monitoring criteria are met and U.S. EPA approves the seasonal schedule. ARB sent a request to the U.S. EPA on June 5, 2013, asking for approval of the monitoring schedule of the seasonal ozone sites covered in this report. On July 17, 2013, U.S. EPA approved the request. The approval letter is attached in Appendix C of this report.

Section 9. Additional information on $PM_{2.5}$ monitors

This section includes information for two required annual network plan elements that relate specifically to $PM_{2.5}$ and do not fit well elsewhere in the report. One required element relates to whether data for a $PM_{2.5}$ monitor can be used to determine compliance with the national annual $PM_{2.5}$ air quality standard. In the CFR, this is termed as the suitability for comparison to the annual standard. The other element requires including in the annual network plan information regarding the review process followed by air agencies when changes are made to the location of a $PM_{2.5}$ monitor that is violating a $PM_{2.5}$ standard.

9.1 Suitability for comparison to the annual $PM_{2.5}$ standard

The CFR states that for $PM_{2.5}$ FRM or FEM monitors used in area-wide monitoring, and that meet siting criteria, the reported data are comparable to the annual $PM_{2.5}$ standard. For a $PM_{2.5}$ monitor to be considered area-wide, the concentration values measured by the monitor should be representative of concentrations expected over an area with dimensions of a few kilometers. The $PM_{2.5}$ FRM and FEM monitors included in this report are sited per the definition of area-wide monitoring in the CFR and meet applicable requirements; therefore, the FRM and FEM data are suitable for comparison to the $PM_{2.5}$ NAAQS.

9.2 Review of changes to $PM_{2.5}$ network

The $PM_{2.5}$ network of FRM monitors in California was largely established in 1999 and completed in 2000. Little has changed in the siting of the FRM monitoring network between then and now. However, between 2008 and 2011, U.S. EPA approved three types of $PM_{2.5}$ FEMs, which are Met One (method 170), GRIMM (method 195) and Thermo (method 181). At the time this report was drafted, four agencies (ARB, Mendocino County, Placer County and Tehama County) in the areas covered by this report have submitted data from these monitors to the AQS database.

As part of ARB's ongoing oversight process, ARB requests the opportunity to review and comment on the possible regulatory consequences of any proposal to move or discontinue a monitor for any pollutant that violates a national or State air quality standard. Furthermore, when a local agency proposes to move or discontinue a monitor indicating the highest concentrations of a pollutant in an area, ARB requests that the agency conduct a period of concurrent or parallel monitoring at that site and at the replacement site being proposed to represent the area as the required high site for the pollutant. This is expected even when the site is close to but not exceeding any standard for the pollutant. The parallel monitoring is typically for a period of many months or a year, depending on the pollutant, the standard that is of most concern, and other factors. In addition, ARB utilizes the annual network plan process to document and provide the public opportunities to comment on any proposed changes to the monitoring network. Any received comments are formally addressed via letters and are documented

in the network plan. The network plan is submitted to the U.S. EPA annually for formal approval of all network modifications, including changes to the $PM_{2.5}$ network.

Section 10. Proposed and recently implemented monitoring site changes

This section lists the proposed and recently implemented monitoring site changes in the areas included in this report, as well as changes to the monitoring sites that the ARB operates in areas outside the stated geographical scope of this report. Proposed monitoring site changes include proposals by the ARB or by districts that are covered in this report to add, remove, or move sites and/or monitors in the monitoring network before the end of 2015. Recently implemented monitoring changes include deployed and/or terminated sites and monitors in the monitoring network that the ARB has become aware of since last year's report. Listed below are the proposed and implemented changes to the monitoring network that ARB is aware of at this time.

Proposed or Implemented ARB Changes:

The ARB recently terminated the Point Reyes site (060410003) in December 2013. The only monitor operating at the Point Reyes site is a $PM_{2.5}$ non-FEM BAM of which EPA approval is not needed for the termination. In addition, ARB replaced the $PM_{2.5}$ non-FEM BAM at the Sacramento-T Street site (060670010) with a $PM_{2.5}$ FEM BAM on May 20, 2014. Finally, in 2013, ARB replaced the PM_{10} FRM monitor at the Willows site (060210003) with a continuous PM_{10} BAM monitor.

Proposed or Implemented District Changes:

The Antelope Valley APCD plans to replace the $PM_{2.5}$ FRM monitor at the Lancaster site (060379033) with a continuous $PM_{2.5}$ FEM BAM by the end of 2014. In addition, the PM_{10} FRM monitor at this site was replaced with a continuous PM_{10} BAM on January 1, 2013. Note that while the Lancaster site is owned and operated by the Antelope Valley APCD, it is the Mojave Desert AQMD that maintains the site and monitors. Moreover, Mojave Desert AQMD is also responsible for the data submittals at Lancaster.

The Mojave Desert AQMD replaced the PM_{10} FRM monitors at the Barstow (060710001), Hesperia (060714001), Trona (060711234) and Victorville (060710306) sites with continuous PM_{10} BAM monitors between late 2013 and early 2014. EPA approval was not needed for the PM_{10} monitor replacements. In addition, Mojave Desert AQMD plans to replace the PM_{10} FRM with a continuous PM_{10} BAM at Lucerne Valley (060710013) in August 2014. Mojave Desert AQMD wants to transition its PM_{10} FRM network to a continuous PM_{10} BAM network and anticipates submitting both standard and local conditions PM_{10} BAM data from its network. Finally, the district plans to replace one of the $PM_{2.5}$ FRM monitors at the Victorville site with a continuous $PM_{2.5}$ FEM BAM by the end of 2014.

The Northern Sierra AQMD relocated the Portola-Nevada Street site (060631009) to a new location on 420 Gulling Street in August 2013. The new

site is called Portola-Gulling Street (060631010). U.S. EPA approved the relocation on December 11, 2013. The approval letter is attached in Appendix C.

The Northern Sonoma APCD replaced the PM_{10} FRM monitors at the Cloverdale (060970001), Guerneville (060973002), and Healdsburg (060970002) sites with continuous PM_{10} BAM monitors in 2013. EPA approval of the monitor transitions was not needed because these changes weren't monitor closures. The District submitted the PM_{10} BAM data into AQS effective January 1, 2014.

In the 2013 ARB annual network plan, the Placer County APCD proposed a new monitoring site in Tahoe City. The Tahoe City site (060611004) is now completed and began sampling in November 2013. Ozone and continuous $PM_{2.5}$ non-FEM BAM data are being reported from this site to AQS. The ozone monitor is designated as a SLAMS monitor in AQS. For this reason, U.S. EPA approval of the SLAMS ozone monitor is required. The District is currently drafting the approval request. In addition, Placer County APCD is proposing to terminate the PM_{10} monitors at the Auburn (060610002) and Colfax (060610004) sites in Placer County. The District will also be asking for U.S. EPA approval of these closures. Finally, the District relocated the ozone monitor at the Auburn-Dewitt C-Avenue site (060610002) to the Auburn-11645 Atwood Road site (060610003) in June 2011 and the ozone monitor at the Lincoln-L Street site (060612001) to the Lincoln-1st Street site (060612002) in September 2012. U.S. EPA approvals of these relocations are needed. The District letter requesting U.S. EPA approval is included in Appendix C of this report.

The Siskiyou County APCD plans to add a continuous $PM_{2.5}$ FEM BAM at the Yreka site (060932001) and re-designate the existing $PM_{2.5}$ FRM monitor as the quality assurance monitor at this site.

The Tehama County APCD plans to relocate the ozone, $PM_{2.5}$ FEM BAM, and PM_{10} monitors from three different locations in the city of Red Bluff to a central location in the same city consolidating all monitoring at the new district headquarters by the end of 2015. The new location is approximately two miles northwest of the current location.

Section 11. Access to more information about the network

While this report includes a great deal of information about the ambient air quality monitoring network, much more information is readily available, including summaries of the pollutant data from the monitors around the State. Much of this information is available on the web. This section lists a number of additional sources of such information. Also listed is contact information for the agencies responsible for the monitoring covered in this report.

ARB's Monitoring and Laboratory Division (MLD) maintains web pages with information about all the existing monitoring sites that routinely monitor and submit air quality data in California. The pages also include detailed local maps showing the location of the sites. This information can be found at: http://www.arb.ca.gov/aaqm/mldaqsb/amn.htm. A more general MLD web page that provides links to other aspects of ambient monitoring is located at: http://www.arb.ca.gov/aaqm/aaqm.htm.

Summaries of the official air quality data from sites around the State can be found at: http://www.arb.ca.gov/adam/welcome.html. Summaries of the most recent preliminary data can be viewed at: http://www.arb.ca.gov/aqd/aqinfo.htm. These last two sources of information are maintained by ARB staff of the Air Quality Planning and Science Division, as is the following more general web page that lists links to other aspects of the ambient air quality data program: http://www.arb.ca.gov/aqd/aqdpage.htm.

Agency contacts for ARB

Regarding this report and questions relating to the collected ambient air quality data:
Pheng Lee, Air Pollution Specialist, plee@arb.ca.gov, (916) 445-6059

Regarding the collection of the ambient data:
Ken Stroud, Chief, Air Quality Surveillance Branch, kstroud@arb.ca.gov, (916) 324-7591

Regarding quality oversight of the monitoring program:
Mike Miguel, Chief, Quality Management Branch, mmiguel@arb.ca.gov, (916) 322-0960

Agency contacts for the air districts covered in this report

Amador County Air Pollution Control District, Jackson, CA
Mike Boitano, Air Pollution Control Officer
AirDistrict@co.amador.ca.us
(209) 257-0112

Antelope Valley Air Quality Management District, Lancaster, CA
Eldon Heaston, Air Pollution Control Officer (also APCO for Mojave Desert)
eheaston@mdaqmd.ca.gov
(661) 723-8070

Butte County Air Quality Management District, Chico, CA
James Wagoner, Air Pollution Control Officer
jwagoner@bcaqmd.org
(530) 332-9400

Calaveras County Air Pollution Control District, San Andreas, CA
Brian Moss, Air Pollution Control Officer
bmoss@co.calaveras.ca.us
(209) 754-6504

Colusa County Air Pollution Control District, Colusa, CA
Joe Damiano, Air Pollution Control Officer
jdamiano@countyofcolusa.org
(530) 458-0590

Eastern Kern Air Pollution Control District, Bakersfield, CA
Glen Stephens, Air Pollution Control Officer
glens@co.kern.ca.us
(661) 862-5250

El Dorado County Air Quality Management District, Placerville, CA
Dave Johnston, Air Pollution Control Officer
dave.johnston@edcgov.us
(530) 621-5896

Feather River Air Quality Management District, Yuba City, CA
Christopher D. Brown, Air Pollution Control Officer
apco@fraqmd.org
(530) 634-7659 x 203

Glenn County Air Pollution Control District, Willows, CA
Jim Donnelly, Air Pollution Control Officer
jdonnelly@countyofglenn.net
(530) 934-6500

Lake County Air Quality Management District, Lakeport, CA
Douglas Gearhart, Air Pollution Control Officer
dougg@lcaqmd.net
(707) 263-7000

Lassen County Air Pollution Control District, Susanville, CA
Dan Newton, Air Pollution Control Officer
dnewton@cityofsusanville.org
(530) 257-1045

Mariposa County Air Pollution Control District, Mariposa, CA
Dr. Charles Mosher, Air Pollution Control Officer
air@mariposacounty.org
(209) 966-2220

Mendocino County Air Quality Management District, Ukiah, CA
Robert A. Scaglione, Air Pollution Control Officer
mcaqmd@co.mendocino.ca.us
(707) 463-4354

Modoc County Air Pollution Control District, Alturas, CA
Joe Moreo, Air Pollution Control Officer
apcd@modoccounty.us
(530) 233-5522

Mojave Desert Air Quality Management District, Lancaster, CA
Eldon Heaston, Air Pollution Control Officer (also APCO for Antelope Valley)
eheaston@mdaqmd.ca.gov
(661) 723-8070

Northern Sierra Air Quality Management District, Grass Valley, CA

Gretchen Bennitt, Air Pollution Control Officer
Gretchen@myairdistrict.com
(530) 274-9360

Northern Sonoma County Air Pollution Control District, Healdsburg, CA
Barbara Lee, Air Pollution Control Officer
nsc@sonic.net
(707) 433-5911

Placer County Air Pollution Control District, Auburn, CA
Tom Christofk, Air Pollution Control Officer
pcapcd@placer.ca.gov
(530) 745-2330

Shasta County Air Quality Management District, Redding, CA
Richard W. Simon, Air Pollution Control Officer
rsimon@co.shasta.ca.us
(530) 225-5789

Siskiyou County Air Pollution Control District, Yreka, CA
Patrick Griffin, Air Pollution Control Officer
pgriffin@co.siskiyou.ca.us
(530) 841-4031

Tehama County Air Pollution Control District, Red Bluff, CA
Alan Abbs, Air Pollution Control Officer
aabbs@tehcoapcd.net
(530) 527-3717

Tuolumne County Air Pollution Control District, Columbia, CA
Vicky Helmar, Air Pollution Control Officer
vhelmar@co.tuolumne.ca.us
(209) 533-5693

Yolo-Solano Air Quality Management District, Davis, CA
Mat Ehrhardt, Air Pollution Control Officer
meharhard@ysaqmd.org
(530) 757-3673

APPENDIX A
Regulatory language of 40 CFR 58.10

§ 58.10 Annual monitoring network plan and periodic network assessment.

(a)(1) Beginning July 1, 2007, the State, or where applicable local, agency shall adopt and submit to the Regional Administrator an annual monitoring network plan which shall provide for the establishment and maintenance of an air quality surveillance system that consists of a network of SLAMS monitoring stations including FRM, FEM, and ARM monitors that are part of SLAMS, NCore stations, STN stations, State speciation stations, SPM stations, and/or, in serious, severe and extreme ozone nonattainment areas, PAMS stations, and SPM monitoring stations. The plan shall include a statement of purposes for each monitor and evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of this part, where applicable. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA.

(2) Any annual monitoring network plan that proposes SLAMS network modifications (including new monitoring sites, new determinations that data are not of sufficient quality to be compared to the NAAQS, and changes in identification of monitors as suitable or not suitable for comparison against the annual $PM_{2.5}$ NAAQS) is subject to the approval of the EPA Regional Administrator, who shall provide opportunity for public comment and shall approve or disapprove the plan and schedule within 120 days. If the State or local agency has already provided a public comment opportunity on its plan and has made no changes subsequent to that comment opportunity, and has submitted the received comments together with the plan, the Regional Administrator is not required to provide a separate opportunity for comment.

(3) The plan for establishing required NCore multipollutant stations shall be submitted to the Administrator not later than July 1, 2009. The plan shall provide for all required stations to be operational by January 1, 2011.

(4) A plan for establishing source-oriented Pb monitoring sites in accordance with the requirements of appendix D to this part for Pb sources emitting 1.0 tpy or greater shall be submitted to the EPA Regional Administrator no later than July 1, 2009, as part of the annual network plan required in paragraph (a)(1) of this section. The plan shall provide for the required source-oriented Pb monitoring sites for Pb sources emitting 1.0 tpy or greater to be operational by January 1, 2010. A plan for establishing source-oriented Pb monitoring sites in accordance with the requirements of appendix D to this part for Pb sources emitting equal to or greater than 0.50 tpy but less than 1.0 tpy shall be submitted to the EPA Regional Administrator no later than July 1, 2011. The plan shall provide for the required source-oriented Pb monitoring sites for Pb sources emitting equal to or greater than 0.50 tpy but less than 1.0 tpy to be operational by December 27, 2011.

(5)(i) A plan for establishing or identifying an area-wide NO_2 monitor, in accordance with the requirements of Appendix D, section 4.3.3 to this part, shall be submitted as part of the Annual Monitoring Network Plan to the EPA Regional Administrator by July 1, 2012. The plan shall provide for these required monitors to be operational by January 1, 2013.

(ii) A plan for establishing or identifying any NO_2 monitor intended to characterize vulnerable and susceptible populations, as required in Appendix D, section 4.3.4 to this part, shall be submitted as part of the Annual Monitoring Network Plan to the EPA Regional Administrator by July 1, 2012. The plan shall provide for these required monitors to be operational by January 1, 2013.

(iii) A plan for establishing a single near-road NO_2 monitor in CBSAs having 1,000,000 or more persons, in accordance with the requirements of Appendix D, section 4.3.2 to this part, shall be submitted as part of the Annual Monitoring Network Plan to the EPA Regional Administrator by July 1, 2013. The plan shall provide for these required monitors to be operational by January 1, 2014.

(iv) A plan for establishing a second near-road NO_2 monitor in any CBSA with a population of 2,500,000 or more persons, or a second monitor in any CBSA with a population of 500,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts, in accordance with the requirements of Appendix D, section 4.3.2 to this part, shall be submitted as part of the Annual Monitoring Network Plan to the EPA Regional Administrator by July 1, 2014. The plan shall provide for these required monitors to be operational by January 1, 2015.

(v) A plan for establishing a single near-road NO_2 monitor in all CBSAs having 500,000 or more persons, but less than 1,000,000, not already required by paragraph (a)(5)(iv) of this section, in accordance with the requirements of Appendix D, section 4.3.2 to this part, shall be submitted as part of the Annual Monitoring Network Plan to the EPA Regional Administrator by July 1, 2016. The plan shall provide for these monitors to be operational by January 1, 2017.

(6) A plan for establishing SO_2 monitoring sites in accordance with the requirements of appendix D to this part shall be submitted to the EPA Regional Administrator by July 1, 2011 as part of the annual network plan required in paragraph (a) (1). The plan shall provide for all required SO_2 monitoring sites to be operational by January 1, 2013.

(7) A plan for establishing CO monitoring sites in accordance with the requirements of appendix D to this part shall be submitted to the EPA Regional Administrator. Plans for required CO monitors shall be submitted at least six months prior to the date such monitors must be established as required by section 58.13.

(8)(i) A plan for establishing near-road PM $^{2.5}$ monitoring sites in CBSAs having 2.5 million or more persons, in accordance with the requirements of appendix D to this part, shall be submitted as part of the annual monitoring network plan to the EPA Regional Administrator by July 1, 2014. The plan shall provide for these required monitoring stations to be operational by January 1, 2015.

(ii) A plan for establishing near-road PM $^{2.5}$ monitoring sites in CBSAs having 1 million or more persons, but less than 2.5 million persons, in accordance with the requirements of appendix D to this part, shall be submitted as part of the annual monitoring network plan to the EPA Regional Administrator by July 1, 2016. The plan shall provide for these required monitoring stations to be operational by January 1, 2017.

(b) The annual monitoring network plan must contain the following information for each existing and proposed site:

(1) The AQS site identification number.

(2) The location, including street address and geographical coordinates.

(3) The sampling and analysis method(s) for each measured parameter.

(4) The operating schedules for each monitor.

(5) Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal.

(6) The monitoring objective and spatial scale of representativeness for each monitor as defined in appendix D to this part.

(7) The identification of any sites that are suitable and sites that are not suitable for comparison against the annual PM $^{2.5}$ NAAQS as described in § 58.30.

(8) The MSA, CBSA, CSA or other area represented by the monitor.

(9) The designation of any Pb monitors as either source-oriented or non-source-oriented according to Appendix D to 40 CFR part 58.

(10) Any source-oriented monitors for which a waiver has been requested or granted by the EPA Regional Administrator as allowed for under paragraph 4.5(a)(ii) of Appendix D to 40 CFR part 58.

(11) Any source-oriented or non-source-oriented site for which a waiver has been requested or granted by the EPA Regional Administrator for the use of

Pb-PM_{10} monitoring in lieu of Pb-TSP monitoring as allowed for under paragraph 2.10 of Appendix C to 40 CFR part 58.

(12) The identification of required NO_2 monitors as near-road, area-wide, or vulnerable and susceptible population monitors in accordance with Appendix D, section 4.3 of this part.

(13) The identification of any PM $^{2.5}$ FEMs and/or ARMs used in the monitoring agency's network where the data are not of sufficient quality such that data are not to be compared to the NAAQS. For required SLAMS where the agency identifies that the PM $^{2.5}$ Class III FEM or ARM does not produce data of sufficient quality for comparison to the NAAQS, the monitoring agency must ensure that an operating FRM or filter-based FEM meeting the sample frequency requirements described in § 58.12 or other Class III PM $^{2.5}$ FEM or ARM with data of sufficient quality is operating and reporting data to meet the network design criteria described in appendix D to this part.

(c) The annual monitoring network plan must document how state and local agencies provide for the review of changes to a PM $^{2.5}$ monitoring network that impact the location of a violating PM $^{2.5}$ monitor. The affected state or local agency must document the process for obtaining public comment and include any comments received through the public notification process within their submitted plan.

(d) The state, or where applicable local, agency shall perform and submit to the EPA Regional Administrator an assessment of the air quality surveillance system every 5 years to determine, at a minimum, if the network meets the monitoring objectives defined in appendix D to this part, whether new sites are needed, whether existing sites are no longer needed and can be terminated, and whether new technologies are appropriate for incorporation into the ambient air monitoring network. The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma), and, for any sites that are being proposed for discontinuance, the effect on data users other than the agency itself, such as nearby states and tribes or health effects studies. The state, or where applicable local, agency must submit a copy of this 5-year assessment, along with a revised annual network plan, to the Regional Administrator. The assessments are due every five years beginning July 1, 2010.

(e) All proposed additions and discontinuations of SLAMS monitors in annual monitoring network plans and periodic network assessments are subject to approval according to § 58.14.

APPENDIX B

For ozone, PM_{10}, and $PM_{2.5}$, the required minimum number of monitors are based on the population of the core-based statistical area (CBSA) and the severity of the air quality for the pollutant in the CBSA. The tables below list the CBSAs, population of the CBSAs, and the site in each CBSA that is currently measuring the highest concentration. In all cases, sufficient monitoring exists, and no additional monitoring is required.

Minimum Monitoring Requirements for O_3, PM_{10}, and $PM_{2.5}$

Ozone

Minimum Monitoring Requirements for Ozone.

CBSA	County(ies)	Population (2010 Census)	3-Year Avg of the 4th Highest Concentration	Site with the Highest 3-Yr Avg of the 4th Highest Concentration	# of Monitors Required	# of Active Monitors	# of Additonal Monitors Needed
Bakersfield*^	Kern	839,361	0.089	Arvin-DiGiorgio	2	8	0
Chico	Butte	220,000	0.076	Paradise-4405 Airport Road	1	2	0
Los Angeles-Long Beach-Anahiem*	Los Angeles and Orange	12,828,837	0.099	Santa Clarita	4	19	0
Redding	Shasta	177,223	0.068	Shasta Lake-13791 Lake Blvd	1	4	0
Riverside-San Bernardino-Ontario*	Riverside and San Bernardino	4,224,851	0.107	Crestline	3	21	0
Sacramento-Arden Arcade-Roseville*	El Dorado, Placer, Sacramento, and Yolo	2,149,127	0.09	Folsom-Natoma Street	2	17	0
Santa Rosa*	Sonoma	483,878	0.053	Santa Rosa-5 th Street^^	1	2	0
Vallejo-Fairfield*	Solano	413,344	0.067	Vacaville-Ulatis Drive	2	3	0
Yuba City	Sutter and Yuba	166,892	0.073	Sutter Buttes^^^	1	2	0

* Parts of these CBSAs are included in the geographical scope of this report, and parts are within the geographical scope of the reports being completed by the districts.
See Table 6a for the completed list of CBSAs in California. The numbers of active ozone monitors listed are for the entire CBSA (see below for site details). Only ozone monitors that are part of the SLAMS and SPM networks are counted towards this monitoring requirement. Exceptional events are included in the determination of the design values.
^ The 3-year average of the 4th highest concentration usually represents the design value. Prior to 2012, the highest concentrations in the Bakersfield CBSA were measured at Arvin-Bear Mountain, which had a 2010 design value of 0.104 ppm. The monitor at Arvin-DiGiorgio, with a 3-year average of the fourth highest concentration of 0.089 ppm, currently has the highest design value among sites with complete data over three years.
^^ The design value for the Healdsburg-Municipal Airport site is likely higher than that for the Santa Rosa-5th Street site, but data are not complete for 2011-2013 at Healdsburg. Nevertheless, the design value for the Healdsburg-Municipal Airport site was well below the level of the federal 8-hour standard in 2010 and for several years prior to that.
^^^ The Sutter Buttes site is a seasonal site (May-October). 2011 data are 79% complete during the 6-month monitoring period.

Ozone sites which are counted towards minimum monitoring requirements.

CBSA	Site
Bakersfield	Arvin-DiGorgio
	Bakersfield-California
	Bakersfield-Municipal Airport
	Edison
	Maricopa
	Mojave
	Oildale
	Shafter
Los Angeles-Long Beach-Anahiem	Anahiem
	Azusa
	Burbank
	Compton
	Costa Mesa
	Glendora
	La Habra
	Lancaster
	Long Beach
	Los Angeles-North Main
	Los Angeles-Westchester
	Mission Viejo
	North Long Beach
	Pasadena
	Pico Riveria
	Pomona
	Reseda
	Santa Clarita
	West Los Angeles

CBSA	Site
Chico	Chico-East
	Paradise
Redding	Anderson
	Lassan Volcanic NP
	Redding
	Shasta Lake
Riverside-San Bernardino-Ontario	Banning-Airport
	Barstow
	Blyth
	Crestline
	Elsinore
	Fontana
	Hesperia
	Indio
	Joshua Tree-Black Rock
	Joshua Tree-Cottonwood
	Mira Loma
	Palm Springs
	Perris
	Phelan
	Redlands
	Riverside-Rubidoux
	San Bernardino
	Trona
	Upland
	Victorville
	Westchester

CBSA	Site
Sacramento-Arden Arcade-Roseville	Auburn
	Cool
	Colfax
	Davis
	Echo Summit
	Elk Grove
	Folsom
	Lincoln
	North Highlands
	Placerville
	Roseville
	Sac-Del Paso
	Sac-Goldenland
	Sac-T St
	Sloughhouse
	Tahoe City
	Woodland
Santa Rosa	Healdsburg
	Santa Rosa
Vallejo-Fairfield	Vallejo
	Vacaville
	Fairfield
Yuba City	Yuba City-Almond
	Sutte Buttes

PM2.5[1]

Minimum Montoring Requirements for PM2.5 SLAMS.

CBSA	County(ies)	Population (2010 Census)	3-year Highest Annual Design Value (ug/m3)	Site with the Highest 3-year Annual Design Value	3-year Highest 24-hr Design Value (ug/m3)	Site(s) with the 3-year Highest 24-hr Design Value	# of Required SLAMS Sites	# of Active SLAMS Sites	# of Additional SLAMS Sites Needed
Bakersfield*	Kern	839,361	17.3	Bakersfield-410 E Planz	65	Bakersfield-California Ave	2	4	0
Chico	Butte	220,000	10.1**	Chico-East**	34**	Chico-East**	1	1	0
Los Angeles-Long Beach-Anahiem*	Los Angeles and Orange	12,828,837	12.5	Burbank & LA-North Main	31	Burbank & LA-North Main	3	12	0
Redding	Shasta	177,223	5.7	Redding-Health Department	17	Redding-Health Department	0	1	0
Riverside-San Bernardino-Ontario*	Riverside and San Bernardino	4,224,851	14.8	Mira Loma Van Buren	37	Mira Loma Van Buren	3	10	0
Sacramento-Arden Arcade-Roseville*	El Dorado, Placer, Sacramento, and Yolo	2,149,127	10.4	Sacramento-DPM	36	Sacramento-DPM	3	6	0
Santa Rosa*	Sonoma	483,878	8.5	Santa Rosa-5th St	22	Santa Rosa-5th St	0	1	0
Vallejo-Fairfield*	Solano	413,344	9.6	Vallejo-304 Tuolumne St	30	Vallejo-304 Tuolumne St	0	2	0
Yuba City	Sutter and Yuba	166,892	7.7	Yuba City-Almond	29	Yuba City-Almond	0	1	0

[1]Design values are based on both FRM and FEM data. The total number of active PM2.5 monitors include both the filter-based FRMs and the continuous FEM PM2.5 monitors that are part of the SLAMS network. Exceptional events are included in the determination of the design values.

* Parts of these CBSAs are included in the geographical scope of this report, and parts are within the geographical scope of the reports being completed by the districts. See Table 6a for the completed list of CBSAs in California. The numbers of active PM2.5 SLAMS monitors listed are for the entire CBSA (see below for site details).

**The Chico-East site started on 4/2/2012. All monitors at the Chico-East site was relocated from the discontinued Chico-Manzanita site. The 2013 design values for the Chico CBSA were computed by combining the PM2.5 data from the two Chico locations (i.e., Chico-Manzanita and Chico-East).

PM2.5 SLAMS sites for which are counted towards minimum monitoring requirements.

CBSA	Site
Bakersfield	Bakersfield-California
	Bakersfield-E Planz
	Mojave
	Ridgecrest

CBSA	Site
Los Angeles-Long Beach-Anahiem	Anahiem
	Azusa
	Burbank
	Compton
	Lancaster
	Los Angeles-North Main
	Mission Viejo
	North Long Beach
	Pasadena
	Pico Riveria
	Reseda
	South Long Beach

CBSA	Site
Chico	Chico-East

CBSA	Site
Redding	Redding-Health Dept

CBSA	Site
Riverside-San Bernardino-Ontario	Big Bear City
	Fontana
	Indio
	Mira Loma
	Ontario
	Palm Springs
	Riverside-Magnolia
	Riverside-Rubiduox
	San Bernardino
	Victorville

CBSA	Site
Sacramento-Arden Arcade-Roseville	Auburn
	Roseville
	Sac-Del Paso
	Sac-Health
	Sac-T St
	Woodland

CBSA	Site
Santa Rosa	Santa Rosa

CBSA	Site
Vallejo-Fairfield	Napa
	Vallejo

CBSA	Site
Yuba City	Yuba City-Almond

Continuous PM2.5[1]

Minimum Montoring Requirements for continuous PM2.5 monitors.

CBSA	County(ies)	Population (2010 Census)	Site with the Highest Annual Design Value	Site with the Highest 24-hr Design Value	# of Required Continuous Monitors^	# of Active Continuous Monitors^^	# of Additional Continuous Monitors Needed
Bakersfield*	Kern	839,361	Bakersfield-California	Bakersfield-California	1	3	0
Chico	Butte	220,000	Chico-East	Chico-East	1	3	0
Los Angeles-Long Beach-Anahiem*	Los Angeles and Orange	12,828,837	Burbank & LA-North Main	Burbank & LA-North Main	2	8	0
Redding	Shasta	177,223	N/A	N/A	0	0	0
Riverside-San Bernardino-Ontario*	Riverside and San Bernardino	4,224,851	Mira Loma Van Buren	Mira Loma Van Buren	2	8	0
Sacramento-Arden Arcade-Roseville*	El Dorado, Placer, Sacramento, and Yolo	2,149,127	Davis-UCD Campus	Sacramento-DPM	2	11	0
Santa Rosa*	Sonoma	483,878	Santa Rosa-5th St	Santa Rosa-5th St	0	1	0
Vallejo-Fairfield*	Solano	413,344	Vallejo	Vallejo	0	2	0
Yuba City	Sutter and Yuba	166,892	Yuba City-Almond	Yuba City-Almond	0	1	0

[1]The CFR does not specify that continuous PM2.5 monitors have to be Federal Equivalent Methods (FEMs); therefore, this assessment includes both continuous FEM and non-FEM PM2.5 monitors.

* Parts of these CBSAs are included in the geographical scope of this report, and parts are within the geographical scope of the reports being completed by the districts. See Table 6a for the completed list of CBSAs in California. The numbers of active continuous PM2.5 monitors listed are for the entire CBSA (see below for site details).

^ The required number of continuous PM2.5 monitor is one-half (round up) the total number of required PM2.5 SLAMS sites in each CBSA (40 CFR 58 Appendix A Section 4.7.2).

^^The number of active continuous PM2.5 monitors listed for each CBSA include both FEM and non-FEM monitors.

N/A means that there is no continuous PM2.5 monitor in the CBSA.

Continuous PM2.5 sites for which are counted towards minimum monitoring requirements.

CBSA	Site
Bakersfield	Bakersfield
	Lebec
	Mojave

CBSA	Site
Los Angeles-Long Beach-Anahiem	Anahiem
	Burbank
	Glendora
	Los Angeles
	North Long Beach
	Reseda
	Santa Clarita
	South Long Beach

CBSA	Site
Chico	Chico-East
	Gridley
	Paradise

CBSA	Site
Redding	--

CBSA	Site
Riverside-San Bernardino-Ontario	Banning-Airport
	Crestline
	Elsinor
	Mira Loma
	Riverside-Magnolia
	Riverside-Rubidoux
	Upland
	Winchester

CBSA	Site
Yuba City	Yuba City-Almond

CBSA	Site
Santa Rosa	Santa Rosa

CBSA	Site
Sacramento-Arden Arcade-Roseville	Auburn
	Colfax
	Elk Grove
	Folsom
	Lincoln
	Roseville
	Sac-Del Paso
	Sac-T St
	Sloughhouse
	Tahoe City
	Davis-UCD

CBSA	Site
Vallejo-Fairfield	Napa
	Vallejo

PM10

Minimum Montoring Requirements for PM10.

CBSA	County(ies)	Population (2010 Census)	2013 Max Daily Concentration (ug/m3)	Max Concentration Site	# of Required Monitors	# of Active Monitors	# of Additional Monitors Needed
Bakersfield*	Kern	839,361	134.3	Oildale	1-2	4	0
Chico	Butte	220,000	59	Chico-East	0	1	0
Los Angeles-Long Beach-Anahiem*	Los Angeles and Orange	12,828,837	77**	Anaheim**	2-4	10	0
Redding	Shasta	177,223	45.5	Shasta Lake	0	3	0
Riverside-San Bernardino-Ontario*	Riverside and San Bernardino	4,224,851	147	Mira Loma	6-10	17	0
Sacramento-Arden Arcade-Roseville*	El Dorado, Placer, Sacramento, and Yolo	2,149,127	79.5	Auburn	2-4	11	0
Santa Rosa*	Sonoma	483,878	54	Healdsburg	0-1	3	0
Vallejo-Fairfield*	Solano	413,344	37.6	Napa	0-1	2	0
Yuba City	Sutter and Yuba	166,892	56.1	Yuba City-Almond	0	1	0

* Parts of these CBSAs are included in the geographical scope of this report, and parts are within the geographical scope of the reports being completed by the districts. See Table 6a for the completed list of CBSAs in California. The numbers of active PM10 monitors listed are for the entire CBSA (see below for site details).

**The Lancaster site reported a max concentration of 185.4 ug/m3 on May 28, 2013. This was not corrobrated by the collocated sampler and is being investigated. The next highest site for the Los Angeles-Long Beach-Anahiem CBSA is the Anaheim site.

PM10 FRM sites for which are counted towards minimum monitoring requirements.

CBSA	Site
Bakersfield	Bakersfield-California
	Canebrake
	Oildale
	Ridgecrest

CBSA	Site
Los Angeles-Long Beach-Anahiem	Anahiem
	Azusa
	Burbank
	Lancaster
	Los Angeles-North Main
	Los Angeles-Westchester
	Mission Viejo
	North Long Beach
	Santa Clarita
	South Long Beach

CBSA	Site
Chico	Chico-East

CBSA	Site
Redding	Redding-Health Dept
	Anderson
	Shasta Lake

CBSA	Site
Riverside-San Bernardino-Ontario	Banning-Airport
	Barstow
	Crestline
	Fontana
	Hesperia
	Indio
	Lucerne Valley
	Mira Loma
	Norco
	Ontario
	Palm Springs
	Perris
	Redlands
	Riverside-Rubidoux
	San Bernardino
	Trona
	Victorville

CBSA	Site
Santa Rosa	Healdsburg
	Cloverdale
	Gunerneville

CBSA	Site
Sacramento-Arden Arcade-Roseville	Auburn
	Colfax
	North Highlands
	Roseville
	Sac-Branch
	Sac-Del Paso
	Sac-Goldenland
	Sac-Health Dept
	Sac-T St
	West Sac
	Woodland

CBSA	Site
Vallejo-Fairfield	Napa
	Vacaville

CBSA	Site
Yuba City	Yuba City-Almond

APPENDIX C

Supporting Documents included in the ANP
(For example, EPA approval letters)

1. July 17, 2013. U.S. EPA letter, approving the seasonal ozone monitoring sites included in this report.

2. August 5, 2013. ARB letter, requesting approval for the reduced sampling frequencies of the $PM_{2.5}$ monitors covered in this plan.

3. December 11, 2013. U.S. EPA letter, approving the relocation of the Portola site in Plumas County.

4. June 25, 2014. Placer County APCD letter, requesting approval of the Auburn and Lincoln site relocations in Placer County.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 17, 2013

Ms. Sylvia Vanderspek, Manager
Air Quality Planning Branch
Planning and Technical Support Division
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812

Dear Ms. Vanderspek:

This letter is in response to your letter dated June 5, 2013 requesting a seasonal ozone waiver for five remote sites within the California Air Resources Board (CARB) ambient air monitoring network. The following sites were requested to operate from May through October: Echo Summit (AQS ID: 060170012), Cool (AQS ID: 060170020), Jerseydale (AQS ID: 060430006), White Cloud Mountain (AQS ID: 060570007), and Sutter Butte (061010004). EPA has reviewed the information provided and determined that data from the requested sites during the part of the year outside the requested monitoring season is not needed for regulatory decision-making; therefore, EPA approves the seasonal ozone waiver for these sites per 40 CFR 58.12 (a)(3); 40 CFR 58 and 40 CFR 58 Appendix D, 4.1(i). This decision is based on site comparisons and maximum ozone concentrations for requested and nearby sites using five years of recent data.

If you have any questions regarding this letter, please feel free to contact me at (415) 947-4534.

Sincerely,

/s/

Meredith Kurpius, Manager
Air Quality Analysis Office

cc: Gayle Swiegert, CARB
Ken Stroud, CARB
Mike Miguel, CARB

Air Resources Board

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

August 5, 2013

Meredith Kurpius, Ph.D., Manager
Air Quality Analysis Office, Region 9
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105

Dear Dr. Kurpius:

The Air Resources Board (ARB) is requesting a waiver to reduce sampling frequency at select PM2.5 and PM10 sites.

Currently, there are eleven PM2.5 sites, covered by ARB's network plan, that operate Federal Reference Method samplers on a 1-in-6 day schedule. Six of these sites operate without a parallel continuous monitor. Low PM2.5 concentrations, in conjunction with other factors, justify reduced frequency at these six sites. In addition, five PM2.5 monitors operate on a 1-in-6 day schedule along with a parallel continuous monitor. ARB requests that these five sites be allowed to continue collecting data on a 1-in-6 day schedule. The ARB network also includes 14 PM10 monitoring sites operating on a 1-in-6 day schedule. ARB also requests that these sites be allowed to continue collecting data on a 1-in-6 day schedule due to low PM10 concentrations in the areas they represent. The attached document summarizes our justification for reduced sampling frequency at these sites.

If you have any questions related to this request, please contact me at (916) 324-7163.

Sincerely,

Sylvia Vanderspek, Chief
Air Quality Planning Branch
Air Quality Planning and Science Division

Enclosure

cc: See next page.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

DEC 11 2013

Ms. Gretchen Bennitt, Executive Director
Northern Sierra Air Quality Management District
200 Litton Drive, Suite 320
Grass Valley, California 95945

Dear Ms. Bennitt:

On July 8, 2013, we received your official request for the discontinuation of the Northern Sierra Air Quality Management District's (NSAQMD) $PM_{2.5}$ monitors at Portola-Nevada Street (AQS Site # 06-063-1009) and the subsequent relocation of the $PM_{2.5}$ monitors - FRM $PM_{2.5}$ Sampler (Rupprecht &Patashnick Partisol-Plus Model 2025 Sequential Air Sampler), two Chemical Speciation Network (CSN) $PM_{2.5}$ monitors (URG_3000N Carbon Sampler, Met One SASS) and non-FEM continuous $PM_{2.5}$ sampler (Met One BAM-1020) no later than August 31, 2013 to the nearby fire station at Portola-Gulling Street (420 Gulling Street).

After a visit to the proposed relocation site and upon our review of the documentation you have provided, pursuant to 40 CFR 58.14, we approve your selection of the fire station at Portola-Gulling Street for the replacement of the current Portola-Nevada Street site. Specifically, we have determined that your request meets the provisions under 40 CFR 58.14(c)(6), namely that logistical problems beyond NSAQMD's control make it impossible to continue operation at the current site and that the replacement site is a nearby location with the same scale of representation (i.e., measuring similar $PM_{2.5}$ concentrations from similar sources). Furthermore, the discontinuation does not compromise data collection needed for implementation of the NAAQS according to the requirements of 40 CFR 58, Appendix D. EPA believes that residential wood-burning appliances are the primary influence at both sites. Accordingly, NSAQMD provided adequate documentation showing that the primary $PM_{2.5}$ influence at both sites is the diurnal wind pattern associated with the middle fork of the Feather River running through Portola and the wintertime use of residential wood-burning appliances. NSAQMD provided visual and on-site confirmation of the distribution and density of flues at the existing and proposed sites, but was unable to confirm if the flues actively emit combustion pollutants or whether or not those pollutants come from propane or wood since the observations occurred during the summer. The existing and proposed sites are located approximately 1000 m NE and 500 SE, respectively, from the Portola Railroad Equipment Yard. Based on the visual and on-site documentation, we expect that $PM_{2.5}$ concentrations measured at the proposed relocation site will be similar to those measured at the existing Portola-Nevada Street site.

The EPA site visit confirmed that the distribution and density of residential wood-burning flues at both the current and proposed site location were similar in their expected impact at the monitoring sites. The existing site at Portola-Nevada Street is located immediately downwind of residential and commercial development, and on a larger spatial scale, undeveloped land. The proposed site at Portola-Gulling Street is located immediately downwind of a more densely populated residential area, and on a larger spatial scale, undeveloped land. In addition to the FRM $PM_{2.5}$ and non-FEM continuous $PM_{2.5}$ monitors, EPA believes that the proposed site is an appropriate replacement for the $PM_{2.5}$ monitors that are part of

the Chemical Speciation Network (CSN). We request that you list the official site address as 420 Gulling Street, Portola, CA 96122 with GPS coordinates (in decimal degrees): 39.81336, -120.47069. Please refer to and attach this approval letter to future Annual Ambient Air Quality Monitoring Network Plans.

Thank you for your cooperation throughout this process and please feel free to contact Jennifer Williams (415) 972-3938 of my staff or me at (415) 947-4534 with any questions or concerns in regards to this matter.

Sincerely,

Meredith Kurpius, Manager
Air Quality Analysis Office

Enclosures
Figure 1. Overview of existing and proposed $PM_{2.5}$ monitoring site, Portola, CA
Figure 2. Existing $PM_{2.5}$ monitoring site at Portola-Nevada Street, Portola, CA.
Figure 3. Proposed $PM_{2.5}$ monitoring site at Portola-Gulling Street, Portola, CA.
Table 1. California Air Resources Board Quality Assurance Air Monitoring Site Information for Portola-Gulling Street, Portola, CA.

Placer County
AIR POLLUTION CONTROL DISTRICT
110 Maple Street, Auburn, CA 95603 • (530) 745-2330 • Fax (530) 745-2373 • www.placer.ca.gov/apcd
Thomas J. Christofk, Air Pollution Control Officer

June 25, 2014

Meredith Kurpius, Ph.D.
Air Quality Analysis Office Manager
U.S. EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: Placer County Air Pollution Control District Air Monitoring Station Relocation Approval Request

Dear Dr. Kurpius:

The Placer County Air Pollution Control District (PCAPCD) is requesting formal approval from the U.S. EPA for the relocation of two monitoring sites located in Auburn and Lincoln. The ozone monitors at these sites were relocated in 2011 and 2012, respectively. The reason for the site relocation was due to logistical problems occurring at that time which were beyond the PCAPCD's control as the buildings did not belong to the PCAPCD and the equipment needed to be removed.

Auburn Monitoring Site

The Auburn Dewitt-C-Avenue site (AQS site ID: 060610002) was located within the Placer County Government-Dewitt Center and has measured PM10 and ozone concentrations since 1979. In July 2011, the office rental lease was ended by the County and PCAPCD was advised that the County had a renovation plan for the building housing the equipment. Therefore, moving the equipment would be necessary. After an intensive search within the vicinity of Dewitt Center, the PCAPCD signed an agreement with the CAL FIRE Nevada-Yuba-Placer Unit on June 2, 2011 to use the Atwood Fire Station as the new location for the Auburn site. The Atwood Fire Station is located approximately 2,000 feet southeast of the Dewitt-C-Avenue site. A new shelter to house the monitors was installed, with sampling starting on June 24, 2011. The new site is named as Auburn Atwood-Road site with a new AQS site ID: 060610003.

The Auburn Atwood-Road site is located at 11645 Atwood Road in Auburn. The monitoring shelter was installed behind the fire station's main building with the sampling probe installed on the building's roof. The sampling probe is in open terrain free from trees and other obstructions in all directions. Attachment 1 includes photos of the Atwood–Road site along with a Google Earth schematic showing the spatial relationship between the Dewitt-C-Avenue site and the Atwood-Road site. The wind pattern and dominant wind direction is assumed to the same at both sites since they are located within the proximity of Placer County Dewitt Center.

With an instrument shortage, along with an intensive schedule to construct and install the monitoring equipment at the new site, the PCAPCD was not able to conduct parallel monitoring at the Dewitt-C-Avenue site and Atwood-Road site. With the lack of data from parallel monitoring, the PCAPCD conducted an analysis which included a statistical assessment for two years of ozone

hourly concentrations measured at the Dewitt-C-Avenue site (2009~2010) and at the Atwood-Road site (2012~2013) to demonstrate that the ozone data measured at both sites were not statistically different from each other.

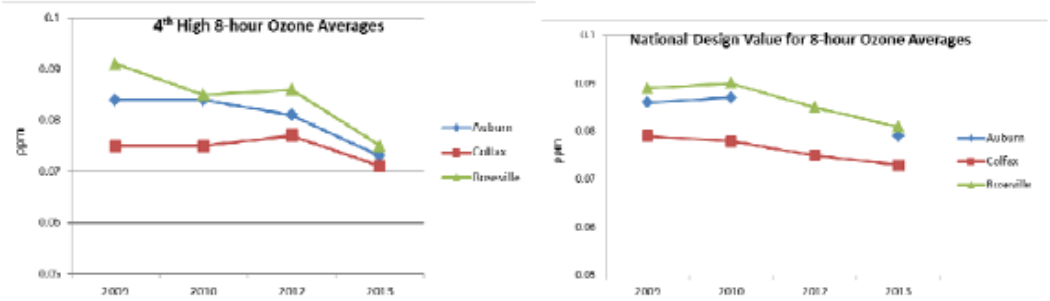
The analysis included data collected from the Colfax City-hall site (AQS site ID# 060610004, 13.8 miles northeast of Auburn) and the Roseville N-Sunrise site (AQS site ID# 060610006, 15.8 miles southwest of Auburn) to demonstrate that the decline in ozone measurements is associated with the improvement of air quality regionally then from the site relocation. Table 1 and Figure 1 below show the 4th highest 8-hour ozone averages from the Auburn, Colfax, and Roseville site during the 2009~2010 and 2012~2013 periods. The detailed analysis includes the statistical test for the hourly concentration measurements in Attachment 2 as evidence in supporting the site relocation.

Table 1 Summary of the 4th High 8-hour Ozone Averages at Auburn, Colfax, and Roseville

The 4th High Daily Maximum 8-hour Ozone Averages				
	2009	2010	2012	2013
Auburn	Dewitt-C-Avenue		Atwood-Road	
	0.084	0.084	0.081	0.073
Colfax	0.075	0.075	0.077	0.071
Roseville	0.091	0.085	0.086	0.075
National Standard Design Value for 8-hour Ozone Averages				
	2009	2010	2012	2013
Auburn	Dewitt-C-Avenue		Atwood-Road	
	0.086	0.087	------	0.079
Colfax	0.079	0.078	0.075	0.073
Roseville	0.089	0.09	0.085	0.081

source: CARB iADAM http://www.arb.ca.gov/adam/index.html

Figure 1 Trend of 4th 8-hour Ozone Averages and Design Value at 2009, 2010, 2012, and 2013



The PCAPCD's analysis shows that the hourly ozone concentrations measured at the Dewitt-C-Avenue site for 2009 and 2010 are not statistically different than the measurements at the Atwood-Road site for 2012 and 2013. The results confirm that the ozone measurements at the two sites are similar and that the site relocation will not result in significant differences of ozone measurements. In addition, the ozone concentration measurements from the Colfax and Roseville sites identifies that the decline of ozone concentrations at the Atwood-Road site is consistent with the regional air quality trend. The new Atwood-Road site, close to the former location, has similar meteorological patterns and therefore provides comparable ozone measurements for the Auburn area. The first audit for the Atwood-Road site conducted by CARB, on February 8, 2012, confirmed that the site

meets the siting criteria required by CFR part 58. The PCAPCD analysis provides conclusive evidence that the relocation of the Auburn m onitoring site continues to provide representable ozone measurements for Auburn area within Placer County.

Lincoln monitoring site

The Lincoln L-Street site (AQS site ID: 060612001) was located in the Glen Edwards Middle School campus. The site measured PM10 fom 1995 to 1997 and began ozone monitoring in 2012. In June 2012, the PCAPCD was notified by the Western Placer Unified School District (WPUSD) (Glen Edwards is in that school district) of their renovation plan for the school's existing building that housed the equipment. The equipment would then need to be relocated before the end of 2012. Initially the PCAPCD proposed the installation of a detached monitoring shelter on the campus; however, the plan was not approved by the WPUSD due to a new safety requirement for school buildings as per the California Department of General Services, Division of the State Architect. After a thorough search, an agreement was signed with the Placer Cemetery District (PCD) on September 12, 2012 to use their existing office at 1st Street as the new location for the Lincoln site. The PCD's 1st Street office is located approximately 1,600 feet southwest of the L-Street site. The monitoring equipment was installed and sampling began on October 15, 2012. At the same time, the ozone monitor at the L-Street site continued to operate until December 14, 2012. The new site is named as Lincoln 1st-Street with a new AQS site ID: 060612002.

The Lincoln 1st-Street site is located at 1445 1st Street. The monitoring equipment was installed in the building with the sampling probe set up on thebuilding's roof. The sampling probe is in open terrain free from trees and other obstructions in all directions. Attachment 3 includes photos of the Lincoln 1st-Street site for documentation and a Google earth schematic to show the spatial relationship between the L-Street site and the 1st-Street site. The wind pattern and dominant wind direction are similar at both sites as they are all located within the proximity of same Lincoln neighborhood area.

The parallel monitoring between the L-Street and 1st-Street site began October 15th and ended on December 14, 2012 when the L-Street site monitoring instruments were removed. About two-months of ozone data were collected and used to compare the ozone measurements as evidence supporting the location change. Table 2 and Figure 2 below shows the summary of data and the scatter plot for ozone concentrations measured at the two sites during the parallel monitoring period (10/15~12/14/2012). The detailed analysis included other statistics for the hourly concentration measurements provided as Attachment 4.

Table 2 Summary of Ozone Parallel Monitoring Data from the 1st-Street and L-Street sites, 10/15~12/14/2012

8-hour Ozone Concentration Averages						
	Lincoln 1st Street			Lincoln L-Street Street		
	date	Time	Conc.	date	Time	Conc.
1st High	10/18/12	14:00	0.083	10/18/12	14:00	0.087
2nd High	10/18/12	16:00	0.081	10/18/12	16:00	0.084
3rd High	10/18/12	13:00	0.079	10/18/12	13:00	0.082
4th High	10/18/12	17:00	0.077	10/18/12	17:00	0.079

Figure 2 Scatter Plot of Parallel Ozone Monitoring Data from Old and New Lincoln Sites

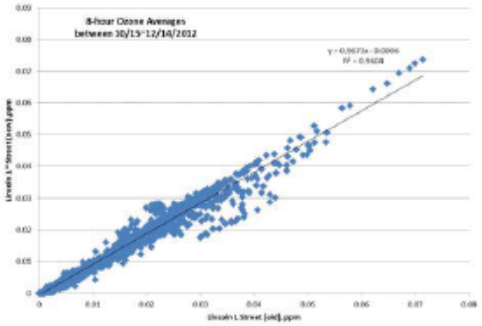


Table 2 and Figure 2 dem onstrates the strong correlation between the ozone concentrations measured at both old and new Lincoln sites during the period between October 15th and December 14th, 2012. Figure 2 shows the scatter plot of the 8-hour ozone averages based on the hourly concentrations measured at both sites. The slope and r^2 correlation for the data is shown on the scatter plot. The r^2 correlation shown in Figure 2 was 0.9604, which indicates the ozone concentrations measured at both sites are highly correlated. The first CARB audit for the 1st-Street site, on August 13, 2013, confirmed that the site met the siting criteria required by CFR part 58. The parallel m onitoring data provided conclusive evidence that the relocation of Lincoln monitoring site continues to provide representable ozone measurements for Lincoln area.

Additional Monitoring Occurred at New Auburn and Lincoln sites

In addition to ozone monitoring, the PCAPCD has added the PM2.5 monitor at the Lincoln 1st-Street site and the Auburn Atwood-Road site, after the relocation occurred, to enhance the air quality monitoring network within Placer County. The PM2.5 m onitor at the Auburn Atwood-Road site is FEM MET ONE BAM-1020 (m ethod code: 170) and the PM2.5 m onitor at the Lincoln 1st-Street site is non-FEM BAM-1020 (method code: 731). The BAMs began reporting PM2.5 hourly measurements and have been operated since 2012.

The PCAPCD has confirmed through the attached analysesconclusive evidence which demonstrates that the ozone measurements at both the new Auburn and Lincoln sites are similar to their previous locations. The new sites will not result in significant differences of ozone m easurements and can continue representing the current air quality status within the Auburn and Lincoln areas. Accordingly, the PCAPCD is requesting the formal approval of each site relocation for the Auburn Atwood-Road site (site ID: 060610003) and the Lincoln 1st-Street site (site ID: 060612002). With approval from the EPA, the PCAPCD will provide the final documentation to CARB for the State Annual Monitoring Network Plan update.

Sincerely,

Yushuo Chang
Planning & Monitoring Section Manager

Cc: Gayle Sweigert, CARB
Tom Christofk, PCAPCD

APPENDIX D

List of Abbreviations and Acronyms

APCD	Air Pollution Control District
AQMD	Air Quality Management District
AQS	Air Quality System
ARB	Air Resources Board
CFR	Code of Federal Regulations
CBSA	Core-Based Statistical Area
FEM	Federal equivalent method
FRM	Federal reference method
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standard
NO_2	Nitrogen dioxide
Pb	Lead
PM_{10}	Particulate matter (0 to 10 microns aerodynamic diameter)
$PM_{2.5}$	Particulate matter (0 to 2.5 microns aerodynamic diameter)
PQAO	Primary quality assurance organization
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Stations
SO_2	Sulfur dioxide
U.S. EPA	United States Environmental Protection Agency